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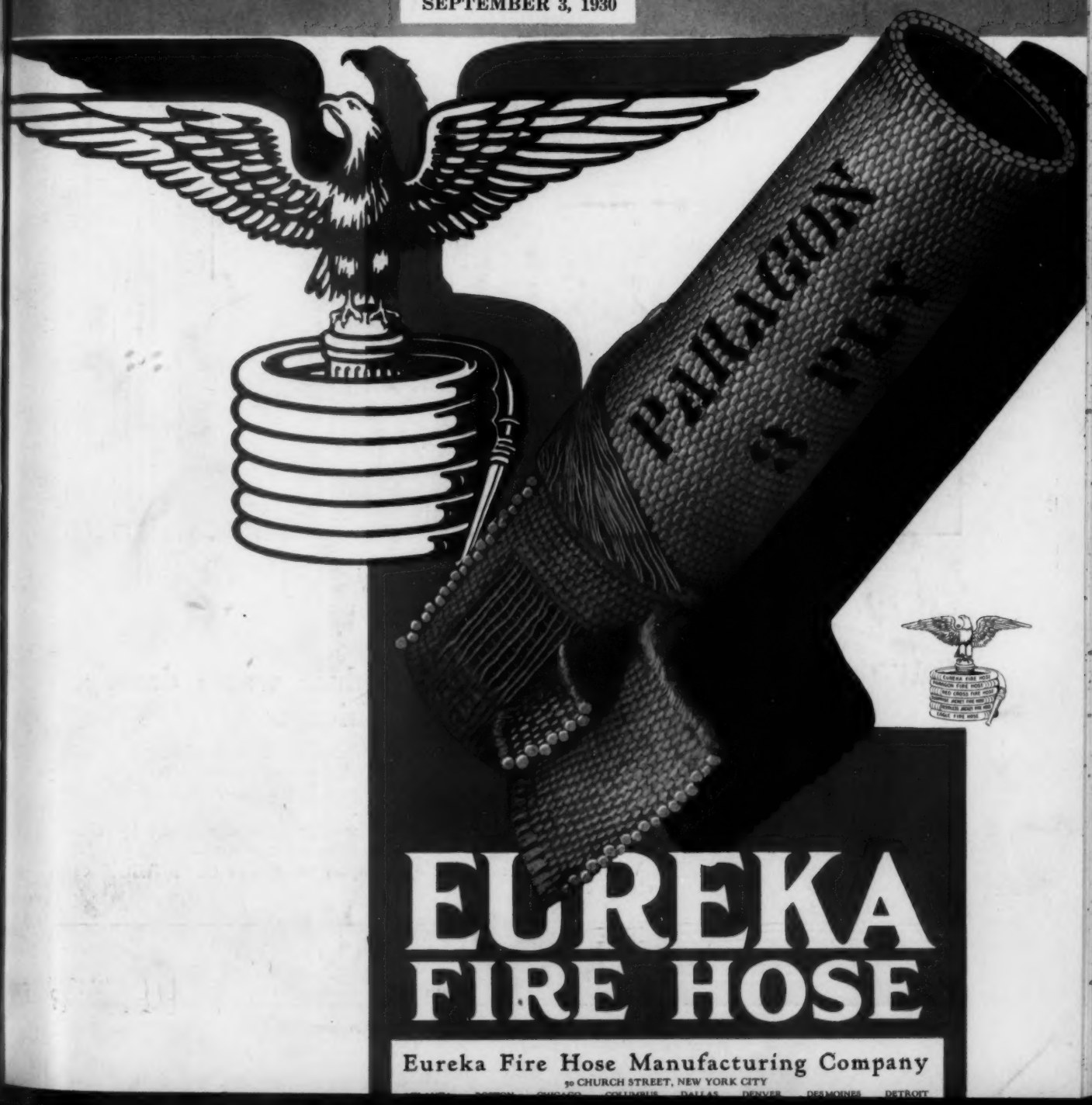
A consolidation of FIRE AND WATER ENGINEERING and THE FIRE ENGINEER

The Journal of the Fire Protection Profession

SEPTEMBER 3, 1930



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Salvage Covers • • •

No. 2 "SHUREDRY" GREEN-BAK Covers have been subjected to a series of exhaustive tests by The National Board of Fire Underwriters, New York, and the Laboratories of The Boston Manufacturers Mutual Fire Insurance Company, Boston, Mass., and have been approved for salvage work.

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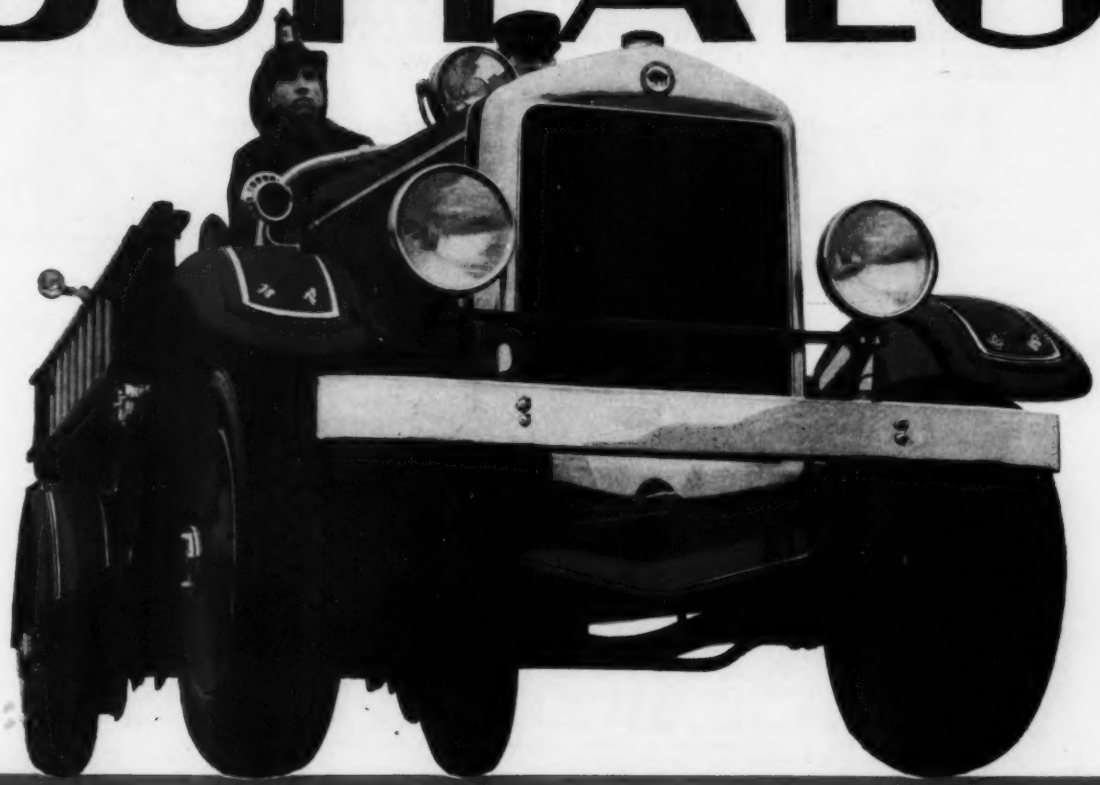

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CONTENTS

VOLUME LXXXIII SEPTEMBER 3, 1930 NUMBER 18

Forty-Three Degrees Below Zero Is Not Startling to These Firemen, By Norman J. Gillespie (Illustrated) 739
Department of Winnipeg, Canada, Started with One Steamer and Two Horses—Only Five Chiefs in Period of 48 years.

There's Sport in Photography, by Harold T. Antrim (Illustrated) 741
Game Has All Breathlessness and Thrills Afforded by More Popularly Accepted Contests—Shoot With Camera.

Deadly Carbon Monoxide, by E. E. Free (Illustrated) 743
Its Poisonous Effects Upon the Human System—Symptoms Sometimes Mistaken for Intoxication—Remedy for Those Affected by the Gas.

Handling the Frame Stable Fire (Illustrated) 745
Removing of Livestock a Difficult Job—Fast Spread of Fire and Intense Heat, Ofttimes Results in Destruction of Building.

Fighting Fire in the Mikado's Kingdom, by Walter Buchler (Illustrated) 746
Combination of Ancient and Modern Means in Japan—Primitive Appliances Employed in Smaller Cities and Villages.

Arson is a New "Racket," New York Fire Marshal Says (Portrait—Illustrated) 747
Burning as Measure of Trade Retaliation and Intimidation Is New Feature.

With the Editor 749
Comments on Current Events and Live Topics by Our Editorial Staff.

Questions and Answers 751
Replies to Questions on All Manner of Subjects of Fire Fighting and Fire Prevention.

Recent Important Fires Specially Reported (Illustrated) 753
Four Alarm Fire Sweeps Philadelphia Tannery—Burnings of Two Weeks.

The Round Table 754
Do You Have an Insurance Policy to Compensate Volunteer Firemen For Injuries Received in the Line of Duty? If Not, How Do You Compensate Your Firemen and What Are Some of the Adjustments Made? What Is Your Opinion of Compensation Insurance?

Portrait Section 755
Photographs of Leading Personages in Fire Department Field.

Fire Department Improvements 785
Record of Business Activities in the Fire Protection Field.

False Alarms 786
The humorous Side of the Fire Protection Profession.

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Will he discover a type of hydrant that will withstand his ruthless wrenching open of the valve? A hydrant that will get a stream of water into his lines in the shortest possible space of time?

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FIRE HYDRANTS

429

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AHRENS-FOX quality and dependability are now available to the smaller cities, towns and communities in the Model V 500 Gal. Booster equipped Triple Combination. So many features of merit are incorporated in this unit you must ask for Bulletin V to know of them all. The price of this apparatus is such that communities of any size can now afford "AHRENS-FOX."

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Here is perhaps the neatest piece of skillful designing you will find in modern apparatus. Every detail is planned to speed up work. There are many new and original conveniences that you will admire. Note the low over-all height, it sure looks speedy—and IS.

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4 WHEEL LADDER SERVICE TRUCK

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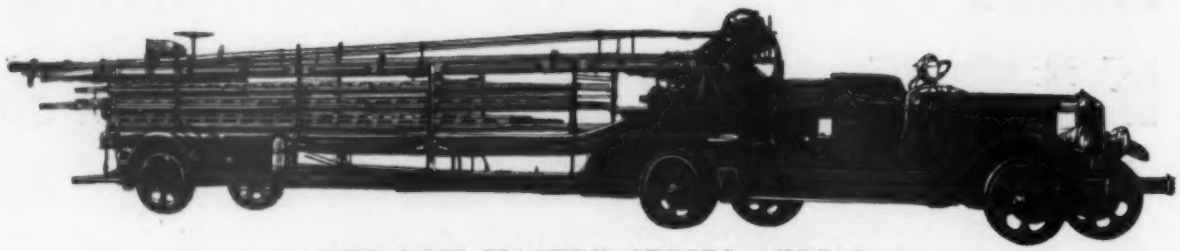
...helping you decrease the fire



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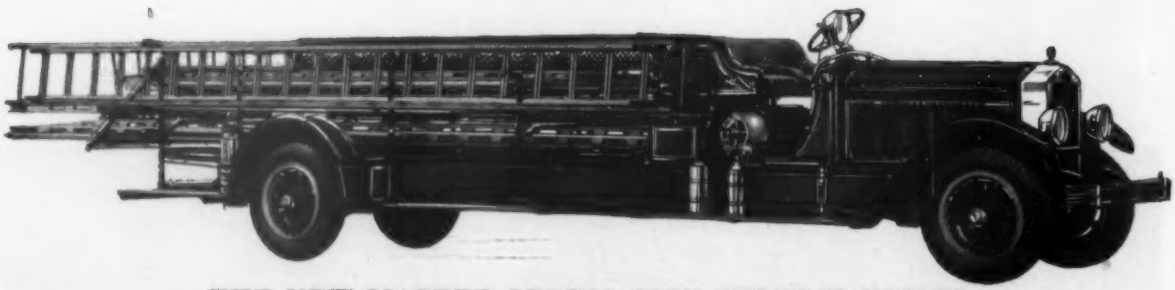

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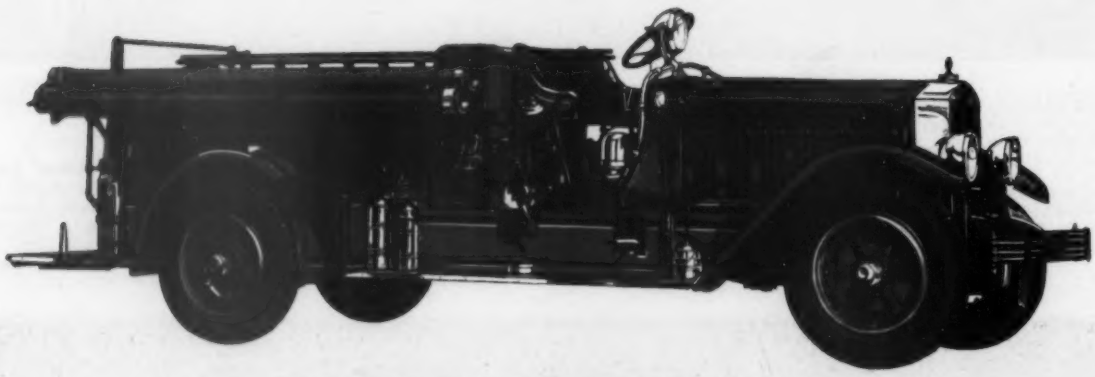

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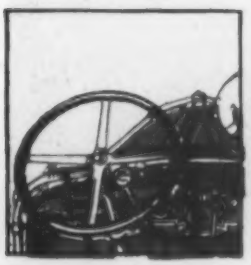

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Left hand drive means greater visibility and increased ease in handling in heavy traffic. It handles easily, without steering wheel fight.

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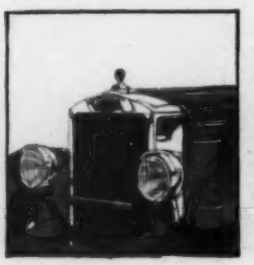
Brakes are of the two-shoe type, fully enclosed — approved by all state highway departments. A Metropolitan fully loaded is designed so it can be stopped within 25 feet at 20 m. p. h.



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On all pumpers the cooling system is closed, with no external discharge, and fully automatic. Anti-freezing solutions can be used without loss.

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Your progress in reducing the yearly fire loss is speeded up by modern apparatus... built to meet the fire problems of today.

American-La France New Master Series Apparatus is engineered to meet *today's* problems. But it is not experimental. Back of it is a company with 86 years' experience in building fire apparatus.

Study New Master Series Apparatus from stem to stern. Left hand drive... pressed-steel, heat-treated frame...4-wheel brakes, that stop this apparatus well within even the most stringent highway regulations... hollow spoke, cast steel wheels built to stand a side thrust of 30,000 pounds... front-end shackles that eliminate all steering wheel fight...double ignition, with two independent sources of current supply.

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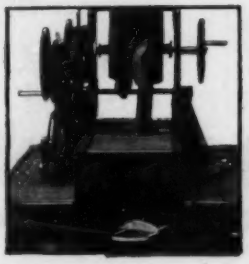
AN ENGINEERING SERVICE

AGAINST FIRE

SIMPLICITY OF CONTROL ON AERIALS

***One* man can easily and quickly raise the main ladder, revolve the turntable and bed the ladder...releasing other men for duty elsewhere.**



CLEAR AERIAL CONTROL PLATFORM

Aerial control platforms are wide, long and free from obstructions. There are no shafts or housings to step over to reach the ladder.

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FIRE OUT!

IMAGINE

answering calls for "Class B" fires without carrying a

FOMON GENERATOR

or several

FOAM TYPE EXTINGUISHERS

Either one will quickly extinguish inflammable liquids, oils, greases, etc. Superior to chemical Tanks.

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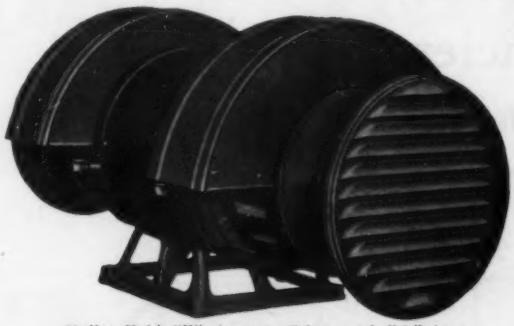


Sterling Model "M" the most efficient sound distributor made. A powerful alarm that carries a great distance.

Sterling Little Giant a powerful intermediate size siren allowing a sound penetration of approximately ⅝ of a mile.

Sterling Big Chief Siren the largest and most powerful apparatus that will operate efficiently from the storage battery of the chief's car or fire truck.

Twenty-Eight Years of Specialization in Sirens

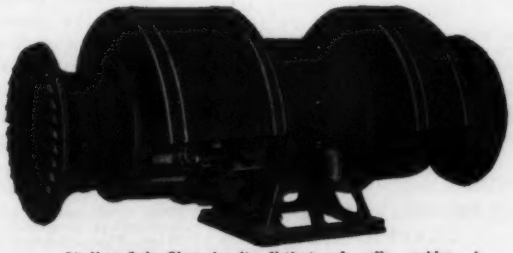
When you purchase a STERLING Siren, you may do so with the positive knowledge that you are installing the best that engineering skill can devise.

STERLING Sirens have been made since 1902 in our own plant . . . which today has grown to a point where it is the world's largest plant devoted to the exclusive manufacture of sirens.

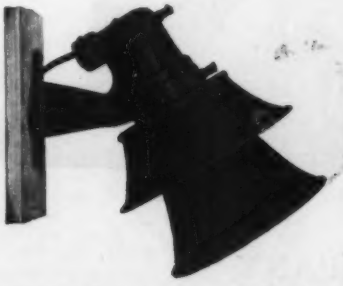
During these twenty-eight years, STERLING Sirens have built an enviable and unparalleled reputation for performance and quality. The materials used in the manufacture of STERLING Sirens are listed with the Underwriters Laboratories, proving that the best of everything is used.

These twenty-eight years of experience have enabled STERLING engineers to design, build, and perfect sirens for every signalling purpose. That's why it saves you money and insures the maximum in performance if you consult STERLING Siren specialists regarding your siren problems. They are at your service without obligation. Address:

STERLING SIREN FIRE ALARM CO.
61 Allen St. Rochester, N. Y.



Sterling Code Siren by its distinct code calls, enables your men to know immediately exactly where a fire is.



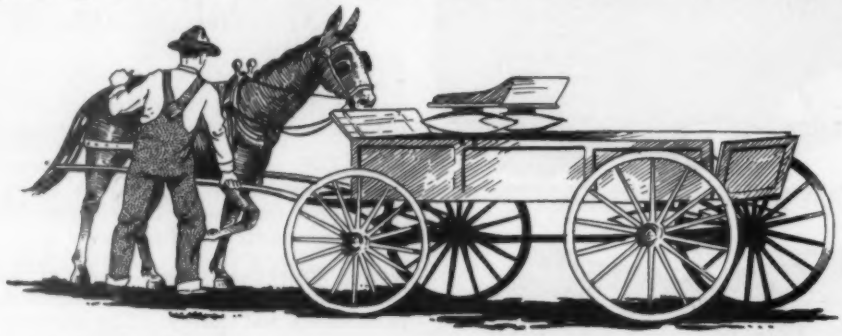
Sterling Traffic Siren posted at important corners, pedestrians and vehicular traffic are warned in advance of the arrival of the fire department. Traffic is cleared—accidents reduced to a minimum.

Sterling No. 12 Siren for use on fire apparatus or chief's cars. Produces a powerful and heavy tone, assuring a safe and speedy passage.

Sterling Hand-Operated Siren for use on fire apparatus where power is not available. Powerful and clear — a great favorite with fire departments everywhere.

Life and Fire Protection Demand FIRST—An Efficient Warning

Getting it last is "Putting The Cart Before The Horse!"



FEDERAL-TYFON
Compressed-Air
HORN

The Federal-Tyfon Horn for simplicity of parts, economy of operation, sound volume, has no equal in compressed air whistles. Its reliability and efficiency select it as the one dependable Fire Alarm Signal. It will sound quick, powerful blasts from any Fire Alarm Box System no matter at what speed this System may operate.

Many cities buy costly fire fighting equipment FIRST, before they install a distinct Fire Alarm Signal—the cart before the horse.

These costly fire fighting tools are, of course, necessary. But to do the most good, they must be *first* brought to the fire without loss of time or motion. Efficient warning signals will turn out men quickly—get them to the fire promptly. The fire alarm signals must be the *first* consideration in Life and Fire Protection.

No other company has made so extensive research into fire alarm signals and sound as has Federal. The result is naturally, the most efficient, the most powerful, the most satisfactory fire alarm signals possible to buy.

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The most efficient warning for smaller cities is a Fedelcode Siren in one of three sizes. Weatherproof. General Alarm or Code. Its powerful, carrying tones are distinctly heard over wide areas. This peculiar, piercing tone screech cannot be mistaken—you know there is a fire—that extra effort and speed are necessary.

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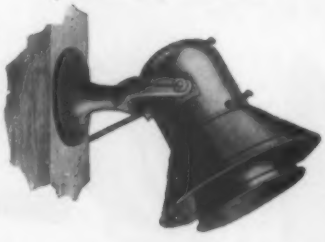
TRAFFIC SIREN



FEDERAL TYPE "A"
TRAFFIC SIREN

These small weather proof traffic sirens are mounted at dangerous street intersections. When Fire apparatus leaves the Station, these Sirens are set sounding the warning ahead. Faster fire runs can be made with greater life and property protection.

FEDERAL "DRIFT"
APPARATUS SIREN

There is no describing the terrific tone roar of the Federal "Drift" Siren. Traffic clears for blocks ahead—the roaring tones, cut through all traffic noise—forcing prompt safety action. Tone roar is *continuous* with the pressing of electric switch four seconds a block — the rotor continues to coast or "Drift" sending out unbroken tone roar. More tone, less current.

FEDERAL "DRIFT"
APPARATUS SIREN

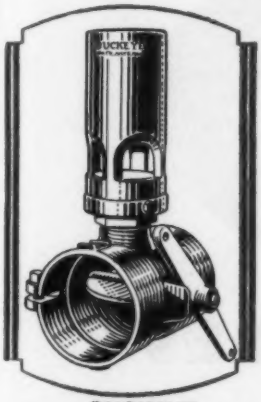
Full facts sent upon request about these Federal Sirens. Write.

FEDERAL ELECTRIC COMPANY

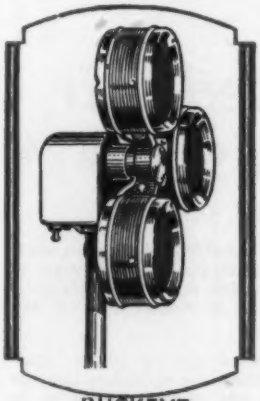
SIGNAL DIVISION

8702 SOUTH STATE STREET, CHICAGO

They can *HEAR* you and *SEE* you coming!



BUCKEYE WHISTLE



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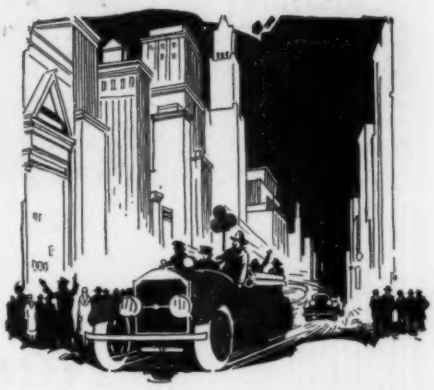

THE Powerful Buckeye exhaust whistle is now standard in *more than Five Hundred* of America's leading Fire Departments.

It stands supreme in the warning signal field because it is the *only* emergency signal that has successfully met today's requirements.

In progressive cities where safety and efficiency are important factors you hear Buckeye whistles. There is a reason. Ask the Chief why.

BUCKEYE ROTO-RAYS, the three revolving red signal lights which instantly identifies the Fire Department after dark, is an ideal companion for any type of warning signal and it performs an extremely necessary service.

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It Pays to Use Warning Signals That Warn

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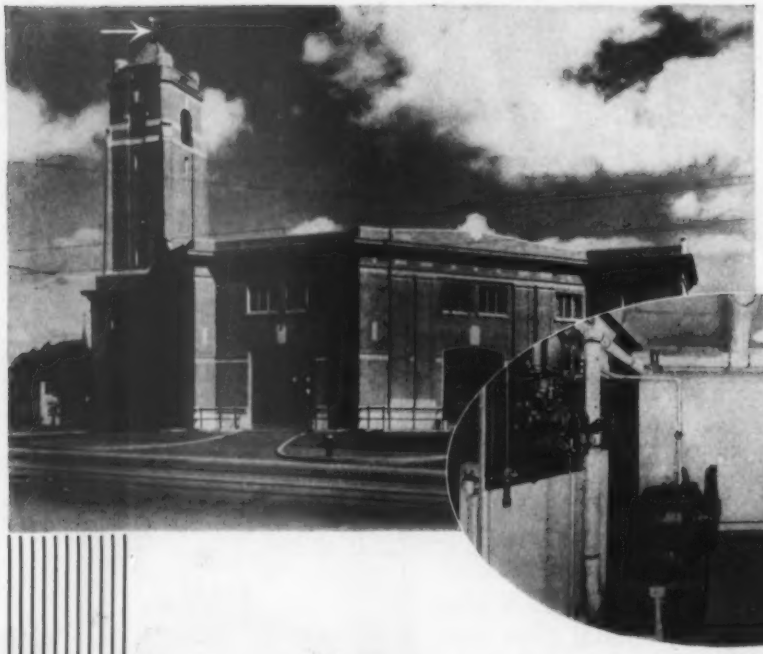
Dayton, Ohio.

Please send descriptive circular and prices on ☐ Buckeye Whistle; ☐ Buckeye Roto-Rays.

Name.....
Address.....
City..... State.....

BUCKEYE



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New England's BEST *Choose the* WORLD'S BEST

LE BARON *Compressed Air* FIRE ALARM WHISTLE SYSTEMS

HAVE been in service since 1897, functioning instantly, giving reliable and efficient service. There are no movable parts to the whistle requiring lubrication, adjustments or replacements. A whistle, horn or any signal so designed that repairs may be required, is not practical for a fire alarm signal which must, at all times be in commission for any emergency.

Mr. LeBaron as the originator and inventor of the compressed air fire alarm signal systems, gave years of thought, study, and experimentation to perfect his invention and our engineering experience and data, acquired over a period of thirty odd years, enables us to make a survey of your municipality and install equipment of sufficient sound and reserve capacity. No lengthy experimentation need be made by your municipality with the unavoidable delay, inconvenience and expense.

This powerful and efficient fire alarm system can be obtained for practically the same cost as a less efficient one. It can be coded to your present quick time, being the fastest known method of audible alarm. The tone of our whistle is very pleasing, being successfully installed in exclusive residential districts. It is more penetrating, and while it can be heard at a greater distance it has none of the harsh disagreeable noise characteristic of many fire alarm signals.

Only trained and experienced workmen are furnished to install a LeBaron System.

Correspondence is solicited with Fire Department Officials in localities where the LeBaron Systems are installed, as per list, as to the reliability, efficiency, economical operation, and high grade workmanship furnished.

For detailed information write to

R. W. LE BARON, INC.

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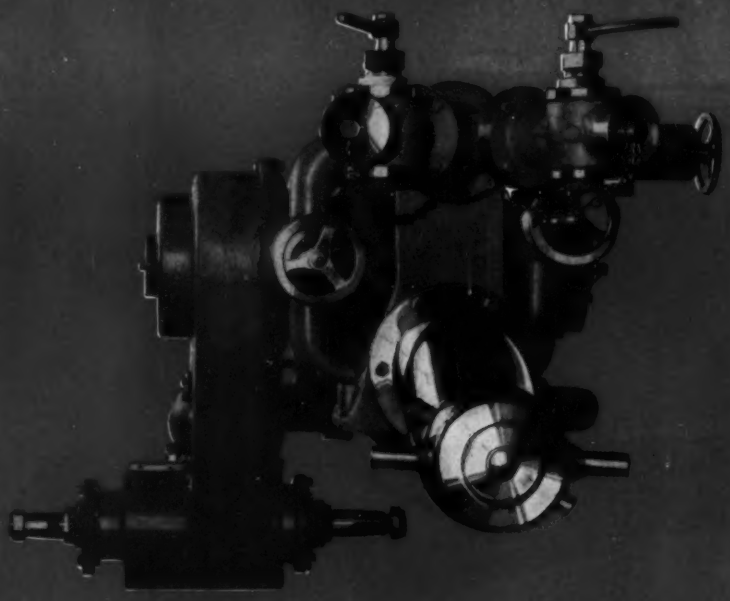

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ROTARY FIRE PUMP

The Waterous Rotary Pump is a cross between a piston and a centrifugal pump; it combines the advantages of both and eliminates the disadvantages of each. It is self-priming, high in efficiency over its entire range, slow speed, simple, compact, and accessible . . . it is a fire pump that is *dependable!*

Through recent improvements internal wear and pulsation have been eliminated while strength and durability were increased. For nearly fifty years Waterous Rotary Pumps have been an important factor in the fire apparatus industry. Specify WATEROUS on your new apparatus!

Waterous
Dependable

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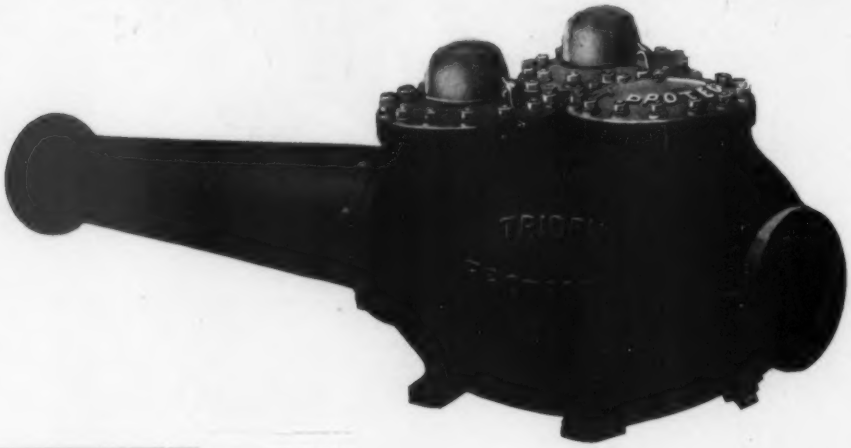
PROTECTUS

Fire Service Water Meter

The First Fire Service Meter
Approved by Underwriters' Laboratories, Inc.



Red Top Water Relief Valve

The only water Gravity relief valve approved by Underwriters' Laboratories, Inc. Saves fires resulting from explosions of domestic hot water boilers.

Unless fire lines are adequately metered Water Departments lose thousands of dollars in revenue every year. This is due to the use of volumes of water for other than fire purposes. Protectus Meters either stop indiscriminate use of water, or accurately measure and register all flows, thus insuring protection from loss of revenue.

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Demands by Underwriters' Laboratories that a fire line meter must operate with unfailing reliability and minimum loss of head, have been definitely met by one meter—the Trident Protectus.

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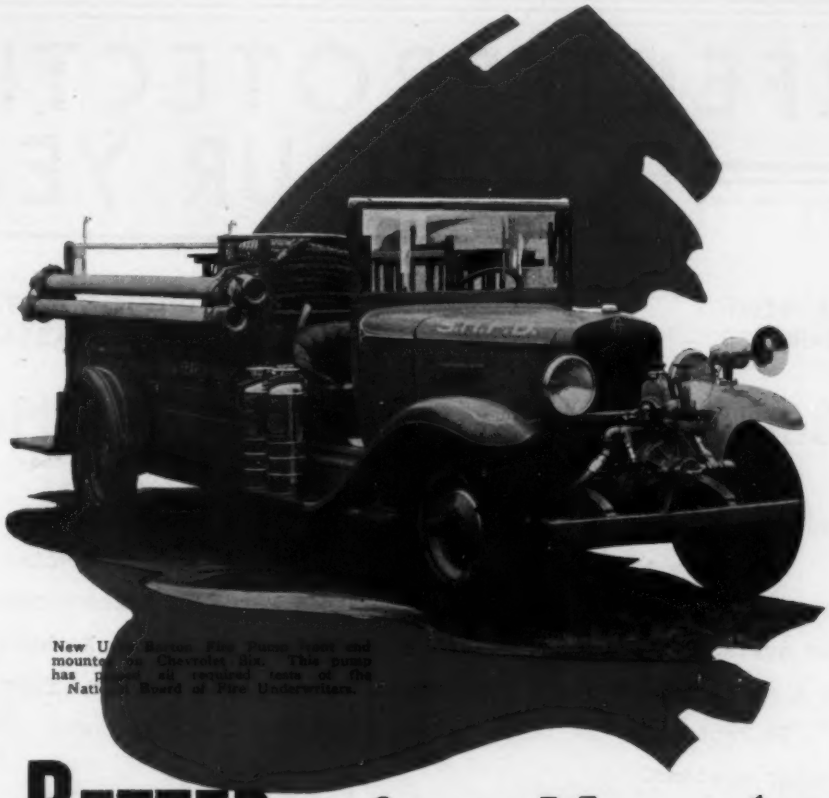

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1. The Barton Pump operates equally well from either hydrant or suction.
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4. Pumps any capacity or pressure without shifting gears.
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CENTRIFUGAL FIRE PUMPS

PERFECT PROTECTION FOR FOUR YEARS

FIRE DEPARTMENT
EDWARD F. DAHILL
Chief of Dept.

CITY OF NEW BEDFORD
MASSACHUSETTS

July 30, 1930

The Gamewell Company
Newton,
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Gentlemen:

Ten years ago we installed our first master box connected direct to a sprinkler system. Today we have eighteen Gamewell boxes connected to sprinkler systems and all have given satisfactory service. We have not received a single false alarm from any of these boxes for over four years.

We recommend the installation of Gamewell Master Boxes connected to sprinkler systems.

Yours truly,

Edw. F. Dahill
Chief of Department.

The Gamewell "Sprinkler Watchman" consists of a standard fire alarm box (Master Model). By attaching this box to the municipal fire alarm system on one side and to the riser or risers of a sprinkler system on the other side, the most direct, efficient, and economical sprinkler supervisory service is provided.
A list of cities where the Gamewell "Sprinkler Watchman" is in service will be sent upon request, along with complete details of how the system operates.

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GAMEWELL
SPRINKLER WATCHMAN

THE GAMEWELL COMPANY
NEWTON · · · MASSACHUSETTS

FIRE ENGINEERING

(A Consolidation of Fire and Water Engineering and The Fire Engineer)

The Journal of the Fire Protection Profession

VOLUME LXXXIII SEPTEMBER 3, 1930 NUMBER 18

Forty Degrees Below Zero is Not Startling to These Firemen

Department of Winnipeg, Canada, Started With One Steamer and Two Horses—Only Five Chiefs in Period of 48 Years

By NORMAN J. GILLESPIE

PRANCING impatiently, tossing their proud heads and snorting defiantly as they tugged at their bits, the two beautiful blacks waited for the last buckle to be snapped into place. The driver leaped to his seat, grasped the reins, shouted: "Let's Go!"

Out the door of the tiny log cabin sped the two beautiful blacks, pulling behind them the shiny steam fire engine.

Winnipeg's first fire department was speeding to answer an alarm.

Chief D. A. Bolden, Winnipeg, Man. Host to the Convention

THAT, in brief, is a word picture of scenes enacted in 1874, slightly more than fifty-six years ago this September, when Winnipeg's first volunteer fire department was organized following incorporation of the city.

In September of this year Winnipeg, Manitoba, located on the vast prairies of Western Canada, will be host to the International Association of Fire Chiefs. Fire Chiefs from every part of the Dominion of Canada and the United States will visit Winnipeg. For that reason a brief outline of Winnipeg and its fire department may be of interest.

In 1874, Winnipeg's volunteer fire department boasted in equipment one steam fire engine, drawn by the beautiful blacks; one hook and ladder truck, drawn by a pair of proud bays: two-thousand feet of two and one-half inch hose. It was housed in a tiny log cabin.

In 1882 the volunteer department was disbanded, a paid department took its place. The equipment was valued at $25,000.

The log cabin had burned down—even fire stations burn down—in 1875, on Christmas morning. That was the fire demon's "Merry Christmas" to the volunteer fire department. A new, more modern frame structure had taken its place. That was Winnipeg fire hall No. 1, in 1882.

W. O. McRobie was the first Winnipeg Fire Department Chief. The paid department, under Chief McRobie, was supplied with new equipment consisting of three steam fire engines, two double chemicals, three horse-drawn hose wagons, one hook and ladder truck and 8,000 feet of hose. There were thirty-six men and seventeen horses.

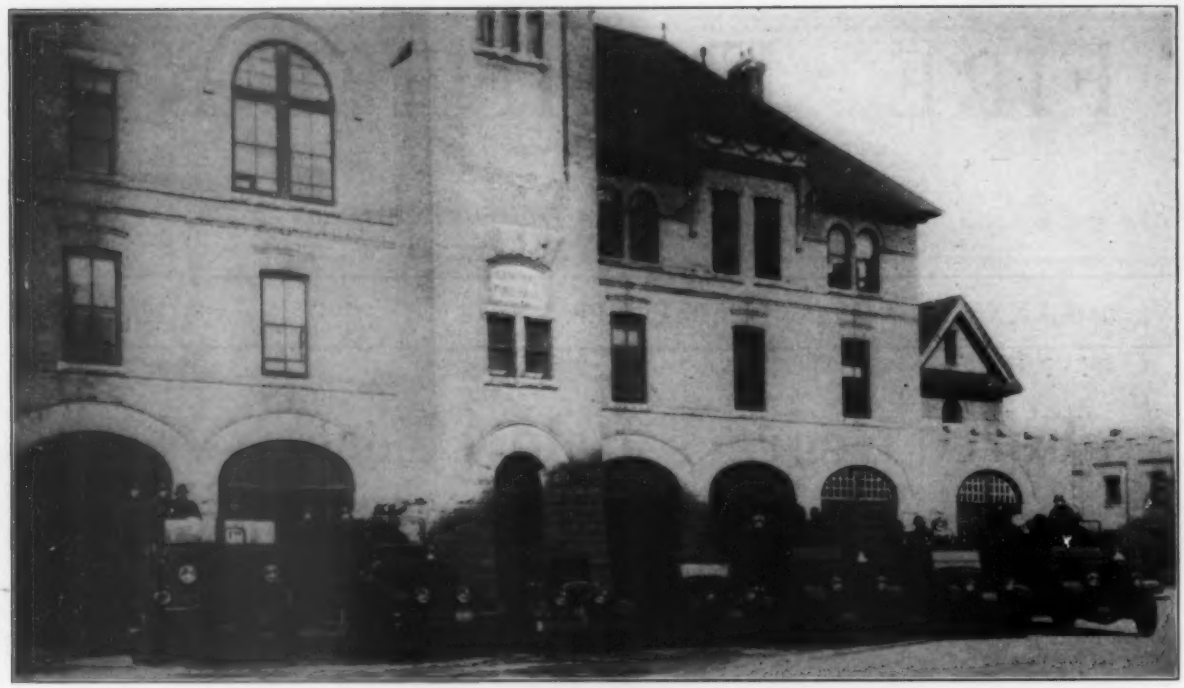
Today Chief D. A. Boulden has under his command 310 officers and men in twelve fire stations located strategically about the city. Today Winnipeg's fire equipment is worth more than $500,000. It consists of three motor-driven aerial ladder trucks, eight motorized hose wagons, six service ladder trucks, five chiefs' cars, one horse drawn hose wagon, ten pumpers, and one foamite wagon with two generators.

Winnipeg's fire department is rated one of the most

Apparatus and Men Housed in No. 7 Station

efficient in the entire Dominion of Canada. Efficiency has been the keynote and watch word of the department since it was reorganized under the expert supervision of the present Chief, D. A. Boulden, in 1928.

In the forty-eight years since Winnipeg has boasted a paid fire department there have been only five Chiefs.



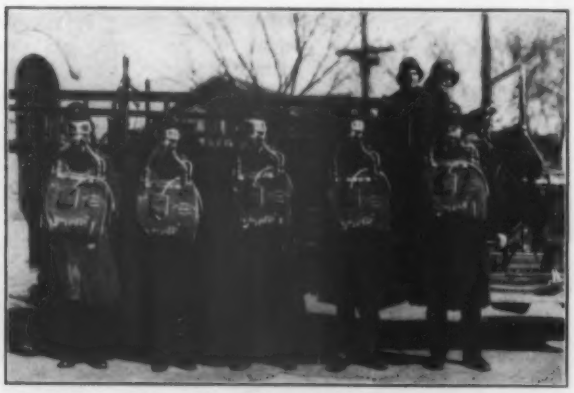
Central Fire Station in Winnipeg Together With Apparatus Stationed There

They were W. O. McRobie, W. Code, E. Rogers, J. E. Buchanan and the present chief, D. A. Boulden.

In 1929 the department responded to 2,183 alarms, and the total fire loss was $760,000.

Fire insurance rates in Winnipeg have been materially reduced in the last year due to the increased efficiency of the department, which at the present time has reached a high standard of proficincy.

Last year the Winnipeg fire department purchased two LaFrance city service trucks and one LaFrance 750-gallon pumper. Most of the city's equipment is manufactured by the LaFrance Company. This year the city purchased three more pieces of standard fire



Rescue Squad of the Winnipeg Fire Department

equipment, and the LaFrance Company was the successful bidders—comprising one motor-driven aerial ladder truck, one thousand-gallon engine, and one City service truck.

The department employs the Gamewell fire alarm system, comprising thirty circuits with 434 street boxes, the majority of which are under ground conduit. The fire alarm system headquarters building is of fire-resisting construction.

A high water pressure system was inaugurated in 1907 and has proved invaluable in fighting menacing conflagrations.

A fire prevention bureau was organized under the personal direction of Chief Boulden and has rendered valuable assistance to the citizens of Manitoba's capital.

A rescue squad also has proved very efficient and this crew uses Burrell all-service smoke masks and self-contained breathing masks.

Winnipeg has experienced many serious fires, but the worst in its history, insofar as loss of life was concerned, occurred, September 1, 1929, when Medway Court, a downtown apartment block, was destroyed. Ten people lost their lives in that fire and ten were injured. Chief Boulden and his department were praised by the coroner's jury which investigated the blaze for their efficiency and for preventing further loss of life. There were sixty people in the building, and the fire broke out at 2:15 A.M. Nearly all were asleep at the time, and the fire spread rapidly. But for prompt action of the fire department the loss of life would have been much heavier.

Firemen of Winnipeg experience great difficulties in winter fighting blazes. The temperature often gets as low as 40 degrees below zero, and under such conditions hose lines "freeze in" nearly as fast as they are laid. The firemen then face a situation calling for ingenuity and speed and they always "come through."

WINNIPEG is the capital of the Province of Manitoba, one of the three great wheat growing Provinces of the Dominion of Canada. It is located about halfway between the Atlantic and Pacific oceans, less than seventy miles from the border of the state of Minnesota. The altitude is 760 feet above New York sea level.

In 1870 the population was 215. Today it is 250,000. Winnipeg is the largest grain trading centre in Canada,

(Continued on page 782)

Fig. 1—Twelve Suburban Towns Helped Fight This Three-Alarm Lumber Fire Just Outside of Philadelphia

There's Sport in Photography

Game Has All Breathlessness and Thrills Afforded by More Popularly Accepted Contests—Shoot with Camera

By DR. HAROLD T. ANTRIM, Division Surgeon, Department of Public Safety, Philadelphia

CLICK. The thing was done.

The sharp staccato sound was scarcely audible in the midst of hissing fire streams noises and throbs of the pumper. Men were hurrying everywhere. Unlike the story of the fish that had escaped from the hook, here was a record that could not be erased or disputed. The camera had retained a picture of the scene.

For the past twenty years, or since I was in my "teens," a camera has been an almost constant companion, but only during the past ten years have I made a specialty of fires.

Fire photography should be classed as a sport for many reasons. There is the tenseness and anxiety to get to the fire, the getting into the proper position, the breathless haste to get a good "shot" and intense action every minute, particularly during the first hour of a "big burnie." Being in a big city and officially associated with the Fire Department is the distinct advantage that I have to get close-ups, but there are very few pictures that I take that are not snapped amongst the spectators. I say this because I wish to stimulate interest amongst the general public and to show them that they can get as good "shots" as those who are lucky enough to get within "the lines."

A kodak is my choice and the No. 3 (made by Eastman) answers all purposes. This camera has an Anastigmat lens f.5.6 with a diomatic shutter having speeds of 1/10—1/25—1/50 and 1/100 of a second. With this kodak a picture anytime during the day or night can be taken and with the best results. A 1A Kodak has all the qualifications for expert photography save for pictures taken in cloudy weather or in dense smoke, and the reason for this is that the lens opening is not as large as the No. 3. A Brownie in good weather and under fair conditions will do the work any other camera will. Night exposures can be made with any kind of a kodak provided it has some stationary object to rest upon and provided enough time is given. Anyone can click a camera during good conditions in the daytime and make a good picture, but at night plenty of time must be taken. Well do I remember many good fire pictures I missed because of under-exposure. Remember it is very hard to over-expose night pictures. On the contrary, it is very easy to under-expose night pictures, and experience is the only teacher. If the camera is placed close to the night fire and the glare is bright, set your camera at "time," leave the shutter open, take a walk, and come back again in a few minutes. Then close the shutter. If your camera is a square or so away from the blaze and the glare is somewhat deadened by a pall of smoke, leave your shutter open for four or five minutes, probably longer.

Because of my duties in tending to the injured firemen I have never yet been able to click a falling wall, or descending object, but some day my lucky "shot" will come.

Being a fire "nut," I try never to be without some kind of a camera. In my car I carry a No. 3 Eastman Kodak with a dozen rolls of film. In my office I have a No. 1A Kodak. Always in my coat pocket there is a vest pocket edition for use when I am caught away from my office or my auto.

I want to emphasize that good developing and printing is of paramount importance. I would suggest that unless the photographer is well versed in such lines, he should not take the chance of spoiling a good negative.

It is much better to practice the art of developing and printing on stray "shots" of ordinary everyday landscapes.

Fig. 1 is of the fire at the Philadelphia Lumber and Millwork Company, located at 63rd & Market Sts. Fire started on a bright warm Saturday May 11, 1929. Three alarms were pulled from 1:10 p.m. to 1:40 p.m., besides having engine companies from twelve suburban towns as the fire was just beyond the Philadelphia side. Cobbs Creek shown in foreground is the dividing line between Delaware County and Philadelphia County, and the area burned was approximately 800 feet long by 100 feet wide. This picture was taken with a No. 1A, with an opening of f.16 and speed of 1/25th of a second.

Fig. 2 is of the fire in the abandoned Lang Paper Mill, located at 24th & Wood Sts., Philadelphia. Four alarms were pulled for this between 2:44 p.m. and 3:04 p.m., the second and third coming together. At the same time there was a three-alarm fire at 12th and Spring Garden Sts. After the fire, Chief Davis told me that had it not been for the other fire he would probably have pulled six alarms for the Lang plant. The picture of the Lang Paper Mill fire was taken on a bright sunny day, but with a heavy pall of smoke everywhere. For this picture I used a No. 1A Kodak with an opening of f.16 and Speed of 1/25 of a second. Picture No. 3 was taken the next day with the same camera, same opening and exposure, and this probably shows more actual destruction than any photo I have in my collection.

After getting the actual fire pictures it is always well to go back the next day and procure photos of the after-

Fig. 2—A 1A Kodak Made This Fire Picture

math. Keep the pictures in an album. Reference to them is almost as good as the actual fire, and you will be surprised to find that these pictures will be the most sought after by all who view them, particularly by the men who were actually at the fire.

Besides keeping my own album, I have a series of loose leaf books entitled Extra Alarms, that I make up and give to the Philadelphia Fire School. In this loose leaf system I include all pictures of the fire, plus newspaper write-ups and pictures, so that there is a complete account of every extra alarm fire with pictures for the past ten years. The officers in the Fire School find this system very helpful for teaching purposes. Try this in your home town and see what personal satisfaction it

Fig. 3—This Picture Tells the Complete Story

will give you. True, there is a lot of work and expense attached to a book or record such as this, but it is worth it.

So the next time you hear the sirens or see a big blaze, slip the old camera in your pocket, step on the gas, and when you get to the fire, shoot away.

You will enjoy your records through the years to come.

Barry Wants Fire Alarm Boxes Removed

Two youths with a perverted sense of humor and an abnormal amount of time to idle away, decided to give the Cleveland Fire Department a thorough airing. They did. Twenty false alarms were turned in as the boys drove around various parts of the city.

Safety Director Edwin D. Barry became very much excited over the amount of running around of the apparatus and men. He proposed to abolish all fire alarm boxes in the city streets. According to Mr. Barry, sixty per cent of the city's fires are reported by telephone so that it would not be a great hardship to Cleveland to have the boxes removed.

But this suggestion started a storm of protest in which the Chamber of Commerce, the Cleveland Association of Building Owners and Managers, the Cleveland Real Estate Board and the Ohio Inspection Bureau played important parts. The insurance interests were prompt in pointing out that if the boxes were removed, there would be a substantial increase in the fire insurance rates.

As an after-suggestion Mr. Barry proposed that a detail of firemen in plain clothes be established to track down and arrest those responsible for the large number of fire alarms. The detail will begin to operate just as soon as Assistant Chief James E. Granger completes a report on how the 2,513 false alarms turned in last year were distributed among the 916 fire alarm boxes in the city.

Camden, N. J., to Have Coffee Truck—A motor truck to be used in delivering coffee to firemen in case of big fires, has been presented to the fire department of Camden, N. J., by the widow of a local city official.

Houston Opens New Fire Station—A new fire station recently completed in Houston, Tex., has been placed in service. There was no pompuous ceremony to mark the opening.

Three New Houses Urged for Youngstown, O.—Chief Callan of Youngstown, Ohio, has urged the construction of three new fire stations, two for the down town section. He said that many public buildings are not properly protected.

Dunn Renamed as St. Paul Chief—Owen C. Dunn has been reappointed for two years as head of the St. Paul Fire Department. At the same time it was announced that the department was scheduled for a shakeup and a house cleaning.

Deadly Carbon Monoxide

Its Poisonous Effects Upon the Human System—Symptoms Sometimes Mistaken for Intoxication—Remedy for Those Affected by the Gas

By E. E. FREE

THE gas of which this article treats is the fireman's deadliest and most subtle enemy. It is particularly dangerous, as it has neither visibility nor odor, and cannot be detected by ordinary means.

Centuries before Socrates drank the hemlock, men knew that anyone shut in a small room with a brazier of burning charcoal would be taken out dead. Even savages knew, as they know now, that because of some terrible poison—the oldest known to mankind—safe fires are to be built only at the mouths of caves and not in the unventilated depths. We now recognize the poison to be carbon monoxide, and its presence in long-unopened caves or tombs probably explains the mysterious deaths of early excavators and tomb robbers, and may be responsib'e, it has been suggested, for the legends of Pharaoh's curse.

Carbon Monoxide Inherent in Use of Fire

It is this gas which is the secret of the deadly "black damp" of mines. It exists in volcanoes and astronomers have identified it in comets' tails. For the most part it is the offspring of combustion. "Poisoning by carbon monoxide," says a recent report by a committee of the American Medical Association, "is one of the hazards of civilized life that can never be entirely eliminated. It is inherent in the use of fire."

This hazard has been increased by the universal use of automobiles. Thanks to education, however, the deaths caused by breathing poisonous exhaust fumes accumulated in small garages are decreasing. The number of carbon monoxide deaths due to imperfect household furnaces, stopped flues, and devices like unventilated gas heaters in bathrooms is more than ten times that due to poisonous gases from automobile engines.

Difference Between Monoxide and Dioxide

When anything containing carbon burns with plenty of oxygen, the gas formed is carbon dioxide—the harmless gas of soda water. Formation of carbon dioxide requires two atoms of oxygen for each atom of carbon. If the oxygen at hand is not enough for this, the monoxide gas is formed; this gas has only one oxygen atom to each atom of carbon. This is why carbon monoxide is often formed in burning buildings, where too little oxygen reaches the inside of the fire to saturate all the carbon that is hot enough to burn.

This chemical difference between the two carbon sisters, Mono and Di, is the reason, too, why the former is poisonous and the latter harmless. Mono is unsatisfied. She always yearns to combine with something else—preferably with more oxygen, if any is available and if the surroundings are hot enough; but almost any other eager chemical will do if hot oxygen is lacking.

Effect of "Mono" on the Human Lungs

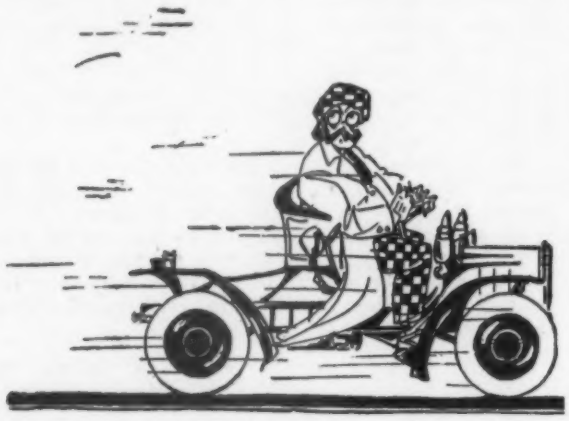
Breathed into human lungs, carbon monoxide finds just such an eager chemical in the red hæmoglobin of the blood, which is continually avid to combine with fresh oxygen and carry it around the body in the blood corpuscles. With this hæmoglobin the carbon monoxide promptly combines; and it so utterly absorbs this blood chemical that, just as improper love affairs so often corrupt one lover or both, the blood becomes for a time unfit for its regular job of carrying oxygen.

This explains carbon monoxide poisoning. There is no reason to believe that the gas itself is deadly. It merely ruins the oxygen-carrying power of the blood so that the brain and other organs slowly suffocate. In the body of a person who has died of carbon monoxide, spectroscopic tests will detect, even years later, this compound of the fatal gas with the blood chemical, still unchanged.

Sometimes Mistaken for Intoxication

Such suffocation gives almost no warning and is easily mistaken, even by physicians, for quite different conditions—for example, for intoxication by alcohol. Three Englishmen were riding recently in a closed automobile through a storm. By some mischance the car slid off the road into water which came up

to its floor boards. The exhaust was submerged. Not realizing their danger, the three men sat for a time in the car, leaving the engine running in order to avoid getting out to start it again, should that be necessary. Two died. When the driver, who happened to be beside an open window, finally realized that something was wrong, he staggered out of the car and made his way to nearby solid ground. He was promptly arrested for drunkenness, with a



charge of causing the deaths of his companions added later when the bodies were found.

Fortunately for the driver, these circumstances were published in the newspapers and attracted the attention of experts familiar with the effects of carbon monoxide, notably Professor J. S. Haldane and Dr. Leonard Hill. An investigation followed and it was proved that the driver was not drunk but poisoned, and that the others had died from poisonous gases forced into the body of the car by the submergence of the exhaust pipe.

The alcoholic picture of carbon monoxide poisoning even includes the familiar conviction of the victim that he is all right and quite able to care for himself. Once, years ago, Professor Haldane was experimenting on himself, and he began to appear rather inebriate because of the lack of oxygen in the air he was breathing. His assistants were compelled, it is reported, to drag him forcibly out of the experimental chamber, while he protested volubly, if thickly, that he was "abslootly aw' ri'."

Some Characteristic Symptoms

Recently Mr. Walter Child noted in the London *Times* two signs which possibly may be general enough to serve as warnings of dangerous poisoning. They agree, at least, with my own experience. One sign of beginning poisoning, Mr. Child writes, is a slight hardening, swelling, and throbbing of the arteries where the pulse can be felt in one's temples. The other is a feeling of weakness in the backs of the legs, as if one wanted very much to sit down.

It may be that everybody does not feel these symptoms from carbon monoxide. Certainly they can be caused by other substances, notably alcohol. Nevertheless, it is probably wise for anyone in a closed automobile or an ill-ventilated bathroom, or who knows himself to be otherwise exposed to possible danger from carbon monoxide, to rush instantly into the fresh air the moment he feels either of these symptoms coming on. Absence of the smell of "fumes" is not a sign of safety, for carbon monoxide has no smell.

Fresh Air Immediate Remedy

Fresh air is the sovereign and immediate remedy, both for the person who feels himself succumbing and for the person already overcome. A caution for would-be rescuers is that the ancient device of a wet cloth over the mouth is no protection against carbon monoxide. In the absence of a really efficient gas mask, like those used by firemen, there are but two procedures reasonably safe for the rescuer.

One is to take a length of garden hose or other tube in his mouth, leaving the other end of this tube in the outside air, and breathe through it like a deep-sea diver—in through the tube and out through the nose. The other procedure is for the rescuer to hold his breath completely while he dashes in and drags out the victim. Carbon monoxide is contained in most varieties of illuminating gas. So far as breathing is concerned, to venture into any space filled with such gases is precisely like diving under water, and must be done with similar precautions.

Immediate Treatment by Experts Necessary

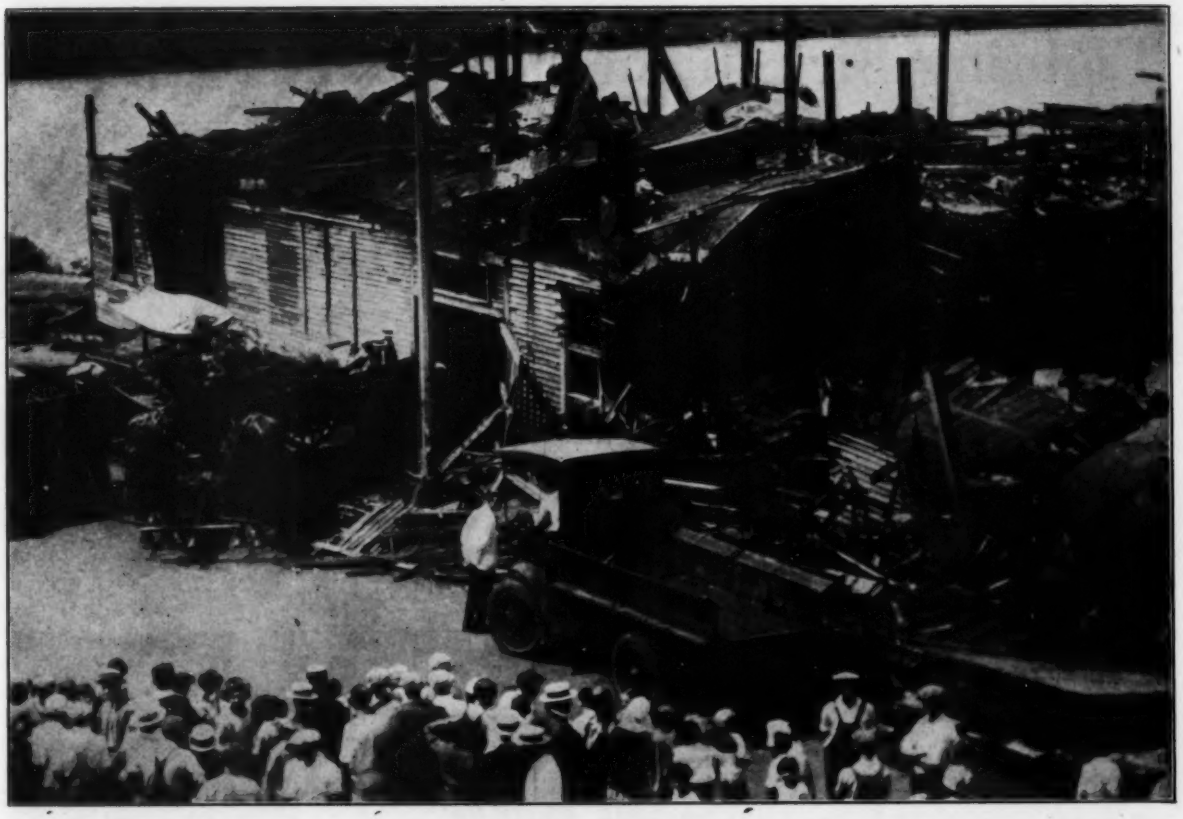
Once dragged into fresh air, the victim of carbon monoxide poisoning needs immediate treatment by experts, and needs especially the inhalation of a mixture of carbon dioxide gas with oxygen. The newest form of this treatment, devised by Dr. C. K. Drinker of Yale, uses for the first twenty minutes seven per cent of carbon dioxide and ninety-three per cent of oxygen. Afterward the proportion of carbon dioxide is lowered to five per cent.

The purpose of the carbon dioxide is to stimulate the brain center that causes deep breathing. The

oxygen is to displace the usurping carbon monoxide as quickly as possible from the captured hæmoglobin of the blood. In cities, the rescue squads of the fire and police departments and of the gas companies are usually equipped to administer this treatment. These experts should be sent for instantly whenever anyone is overcome by what seems to be carbon monoxide.

Meanwhile, rules of "what to do until the fireman

(*Continued on page* 782)



43 Horses Lost Their Lives in This East Boston Fire

As usual in this class of blaze, building was fully involved by the time the department was able to get to the scene. It was impossible to get any of the stock out of the structure, and all that the department could do was to hold the fire from spreading to dwellings and other buildings alongside. Poor construction and highly inflammable contents are characteristic of this type of establishment.

Handling the Frame Stable Fire

Removing of Livestock a Difficult Job—Fast Spread of Fire and Intense Heat Ofttimes Result in Complete Destruction of Building

IN view of the usual style of inflammable construction, the nature of occupancy and the large quantities of highly combustible materials present, it is not surprising that the average frame stable fire represents a complete loss.

An inferior grade of lumber is usually employed in building frame stables, and it is rare to find the interior of such building painted. The result is the drying out of the wood and the creation of a condition which means complete destruction of the building once fire starts. Grain boxes, managers, feed boxes, and all parts of the building fall in the same classification.

To make matters worse this kind of building is so built that it is one maze of openings throughout. There are usually no dividing partitions which are entitled to such a name. There are no fire stops from the ground floor to the hay loft. On the other hand, there are usually found hay openings or chutes over each stall so that hay can be dumped directly into the mangers below.

In addition to the hay openings there are shafts, stairwells, runways, hoistways, and other passages through which fire can spread. The astounding rapidity of spread of fire through buildings of this nature can be appreciated.

While some stables are two or more stories in height, it is not often that livestock is kept on the upper floors. As a rule the upper floor is employed for the storage of baled hay, baled straw, and seed. The ground floor is given over almost entirely to stalls, together with harness room, and an occasional grain storage room.

Where the second floor is well stocked with feed, the weight on the floor is apt to be excessive. In the event of fire, and the use of fire streams, the absorption of water by baled hay and straw will increase the load on the floor tremendously and may result in the collapse of the floor.

Occasionally loose hay is found in the hay loft, and in such case a much more serious fire hazard is created. Loose hay, too, will absorb and retain great quantities of water with a result similar to the case of baled hay and straw.

The origin of most frame stable fires is a mystery. It is easily conceivable, however, that many of such fires start from the careless use of smoking materials, while others originate from defective heating apparatus or from defective electric wiring.

In any case, once fire starts its progress is fast.

(*Continued on page* 778)

Fighting Fire in the Mikado's Kingdom

Combination of Ancient and Modern Means in Japan—Primitive Appliances Employed in the Smaller Cities and Villages—Gradual Improvement in Methods

By WALTER BUCHLER

IT is always interesting to compare the methods of fire prevention and fire fighting in foreign cities with our own. This is especially true of the primitive means employed in oriental lands to combat the fiery destroyer. The following article is written by an expert in all matters connected with the Flowery Kingdom, and will therefore prove instructive:

Fig. 1—The Ancient Japanese Fire Tower

One of the most serious and most pressing problems municipalities have to face in Japan is that of fires. Japan has more fires than perhaps any other country in proportion to population and number of houses. Electric leakages, arson, cigarette ends, hibachi (earthenware pot), chimneys, portable stoves, and a variety of other means of lighting and keeping oneself warm are the principal causes of fires in Japan, resulting in over $40,000,000 worth of damage to property alone every year.

It has been established that the majority of the fires which take place in Japan result from sheer carelessness. There is another strange feature of Japanese life, especially in industry: arson is frequently resorted to as a means to obtaining insurance money, and occasionally by a dissatisfied or angry Japanese who desires to show his resentment towards his employer or anybody he has a grudge against.

The fire season, which is in December, is known in Japan as the "red flower" season, and fires in that month are extremely common. A fire in Japan is a much more serious affair than it is here, for it generally means the destruction of several blocks of houses closely crowded together and holding hundreds of families.

Japanese Houses Extremely Inflammable

Japanese houses are built of wood and naturally burn like matchwood. (See Figs. 2 and 3). Defective wiring (insulators being mostly to blame) is found in the majority of the houses in Japan, and sometimes even in factories, where electricity is largely used as power, this being cheaper than all fuels in Japan. Sparks from "hibachis" are common and quickly set fire to the "tatami" (matting) which serve as floor-covering. The hibachi is kept alight day and night, summer and winter. The Japanese sit and sleep on the tatami; in place of chairs they use cushions to squat on, and bedding with futons (heavy quilts) take the place of beds. All these easily catch fire, especially when one considers the Japanese practice of laying over the "hibachi" the quilts to make them warm, so as to be ready when the user retires for the night.

In the majority of Japanese homes, cooking is still done over the "hibachi," though modern methods (gas, kerosene, electricity) are gradually becoming more widely used in Japan, especially in the larger cities such as Tokyo, Osaka, and Kobe.

Primitive Fire-Fighting Methods

The first fire-brigades were used in Japan between the fourteenth and fifteenth century. Then, the feudal lords of Japan had their own private firemen. Pails, water jugs, pitchforks (for pulling down houses) were used and wells dug in certain sections of the city in case of need. Many houses in Tokyo had pails placed in front of them, and in 1840 there were in that city about 159,500 of such pails for use in case of fire.

Many of the means to guard against and put down fires in Japan are still very primitive. The visitor to Japan is at once struck by the presence of numerous watch towers (Fig. 1) at the more important strategic points, usually in the neighborhood or adjoining the police station. The control of fire in Japanese cities comes under the jurisdiction of the police. These fire-towers are constructed of wood and have a bell placed at the top. Here a policeman stands on duty continually, being relieved from time to time by another. If he rings it once, this means there is a fire in the distance, if twice or thrice, a fire in the vicinity, if continuously, then the fire is in the same road. That was the method of announcing a fire in ancient Japan and still prevails to-day in the smaller towns and villages.

Japan Good Market for Fire Apparatus and Appliances

In Tokyo, Yokohama, Nagoya, Kyoto, Osaka, and Kobe modern fire-apparatus is employed. The fire-equipment is

(*Continued on page* 774)

Fig. 2 (Upper)—A Japenese Candy Store in Kobe, Illustrating the Flimsy Character of the Buildings. Fig. 3 (Lower)—Interior of a House in Tokyo, Showing Inflammable Furnishings

Arson Is a New "Racket," New York Fire Marshal Says

Burning as Measure of Trade Retaliation and Intimidation is New Feature—Fire Marshal's Men Should Attend Every Business Fire

As told to "JERRY" DALY

"YOU ask me 'What is new in arson?'" exclaimed Chief Fire Marshal Thomas B. Brophy of New York City, as he was packing a bag for a hurried departure to the annual convention of Police Chiefs of the United States and Canada—it should be told here that Chief Brophy, a member of the uniformed fire force is a police fan as a matter of strategy—"well, arson is one of the latest forms of 'racket'; an instrument of vengeance or retaliation for tribute and blackmail demanded but not paid," the Fire Marshal said.

Fire Marshal Thomas P. Brophy, New York City

"The recent destruction by fire in various sections of New York City of large aparatment houses in course of construction," the Fire Marshal said, "was a 'racket' on the part of certain elements in labor circles in revenge for the refusal of certain builders to award them contracts in such commodities as plastering, lathing and other sub-contract job. Incompetent and sleepy watchmen gave little and most times no help to the authorities in preventing these criminal practices. These fires were just another illustration of resort to incendiarism, for it involves less risk to the perpetrators than personal combat or assault and battery on the individual. The county prosecutors in the five counties that comprise New York City did great public service, in putting an end to this form of 'racket.'

Arson Resorted to in Trade Rivalry

"Arson was resorted to for quite a time in the trade rivalry that existed between wet-wash laundries," Chief Brophy continued; "price cutting and competition for business resulted in the hiring of thugs to wage war and instead of blackjacks and bullets they resorted to arson. Unsuccessful intimidation was made successful by application of the torch and in some instances by the application of acids to the materials being washed. To prove that they were entitled to full pay for the consummation of their 'contracts' to destroy enemy competition, the torch bearers brought back to gangster headquarters collars and shirts bearing the particular laundry identification mark of the establishment afire.

"Arson was also resorted to as a vehicle for settling fueds between rival tradesmen in the coal, wood and ice business conducted in cellars of tenements. One of our chief difficulties in endeavoring to put an end to this form of incendiarism was the reticence of those victims of such fires who had knowledge of the identity and activity of their enemies in the trade. In most cases these men were Latins or other southern Europeans, who feared reprisals for talking to fire and police officials, with the result that it was doubly difficult to get at the bottom of this type of arson case, but that ring of arsonists seems to have been pretty well broken up.

"Business Fires" Less Frequent Than Heretofore

"Customs and practices in making fires to defraud insurance companies have changed in character, in that the unscrupulous merchant nowadays rarely touches the torch himself. He hires a professional 'bug,' a criminal who can better afford to be caught and will have less to lose by penal incarceration than the employer or owner of the establishment. Even with industrial and commercial conditions as they are to-day, the so-called business depression has surprisingly been free from arson as a cure-all for the ills of business. I do not say that 'business fires' have stopped—not at all—but 'business fires' are not as numerous as they were and there would be less of them if the banks would be more particular about the extension of credit on certain merchandise.

Defrauding Insurance Companies More Difficult Today

"The defrauding of insurance companies through the channel of burning stocks and other properties is much more difficult to-day than it was years ago, because a well organized system of investigation causes great inconvenience and embarrassment to the merchant with

"The recent destruction by fire in various sections of New York City of large apartment houses in course of construction was a 'racket' on the part of certain elements in labor circles in revenge for the refusal of certain builders to award them contracts. Arson was resorted to for quite a time in the trade rivalry that existed between wet-wash laundries. Arson was also resorted to as a vehicle for settling feuds between rival tradesmen in the coal, wood and ice business conducted in the cellars of tenements."

Gasoline and Streamers Used by Firebug to Facilitate Blaze

This tub, placed under a stairway on the second floor of the building in which the fire occurred, was filled with gasoline. The cotton streamer shown led to the third floor, where a similar tub of gasoline had exploded.

the suspicious or mysterious fire. The suspension of his business for weeks during which every angle of his affairs is delved into, the seizure of his books, records, ledgers, bills of sale, financial statements, bank accounts; the various examinations and inquisitions, the almost daily excursions to the Fire Marshal's office and their accompanying loss of time; then similar trips to the insurance company office and sometimes to the county prosecutor's office—all of these wear down on a man's courage and make inroads on his health as well as on his pocketbook. The impairment of his credit in the trade, the unpleasant and damaging publicity, the injurious bulletins sent out by the trade informing others of the fire and its questionable honesty—all tend to make business fires unprofitable, because the banks, too, grow cold after the damage is done and officialdom in general treats him righteously stern.

Modern Firebug More Scientific Than His Predecessors

"On the other hand, the firebug of to-day is more scientific than his predecessors were and consequently he is a much more difficult individual to combat. The creation of novel and scientific methods to convey impressions of accidental origin of a fire are growing more perplexing with time. Modern appliances and equipment in shops, factories, offices and stores, especially the electrical contrivances for heating and lighting, give the 'plant' of the firebug that much more semblance of inadvertent origin. The short circuit and the defective motor ofttimes supplant the slow burning candle or the wax taper. I have in mind the recent case of Chinese punk which required five hours to burn down to the match-heads which in turn ignited trailers to gasoline tubs resulting in blowing out the front of the building.

"The destruction in this case was so complete that we would not have known of this plant were it not for the confession we obtained later from the 'torch' as well as from the owner of the premises who procured him. Both are now in prison.

"Some resourceful business men desiring to sustain some measure of damage and yet not be branded in the trade as having a fire, make certain that the concern on the next floor has a fire so that at least a water damage will accrue to them.

Insurance Companies Exercising More Care

"Insurance companies are exercising to-day much greater care and scrutiny with risks than heretofore. Recklessness in granting policies has diminished considerably, and only now and then is over-insurance found as an incentive for arson. Obstacles placed in the path of collecting insurance have tended to reduce the number of such fires.

"The entire fire fighting and fire prevention world

(*Continued on page* 782)

With the Editor

The Fire Chiefs' Convention

For the fifty-eighth time the International Association of Fire Chiefs will hold its annual convention convening this year in Winnipeg, Man. For the third time in its history it will go outside of the United States for the yearly gathering. The first departure of this kind was the twenty-second annual convention, held in Montreal, Can., on August 14 to 17, 1894, when Chief James Foley, of Milwaukee, Wis., presided, and Chief Z. Benoit, of Montreal, was elected President for the ensuing term.

The second visit to Canada was on July 26 to 29, 1920. Chief Kenlon of New York, was President of the association at this time, and Chief John F. Healy, of Denver, Col., was elected for the ensuing year.

This third visit to the Dominion finds the association in a better condition in every way than it has ever been in its long and honorable history. Both in membership and in noteworthy accomplishments the past year, under the able leadership of President Scott, the association has made great advances, and today stands as one of the representative bodies of the country. It will be the task of the incoming administration not only to maintain this lead, but also to advance still further along the path of fire-fighting efficiency. There is no doubt that the new officers will rise to the occasion.

The convention city this year has much to commend it. From the technical viewpoint, the committees in charge of the convention program have prepared rare treats for the serious minded Chief who attends the convention primarily with the idea of improving and extending his firemanic knowledge. And it is safe to say that this class includes a very large majority of those who will go to Winnipeg.

But the convention is not all work and no play. There will be ample time for the enjoyment of the lighter pleasures of such a trip between the sessions of the convention and the far northern city will provide plenty of such entertainment, under the direction of the genial host, Chief Boulden.

In fact, there will be little or no excuse for any Chief attending the 58th annual convention of the I. A. F. C. to return home without having increased his knowledge of fire fighting and also without having had a most enjoyable time.

Retrenchment Leaves City Unprotected

A certain city in the South recently found itself in the unfortunate position of being unable to meet its accumulated financial obligations. Retrenchment was the order of the day, and, as so often happens, the Fire Department was one of the first departments to feel the sharp edge of the hatchet. Four men were lopped off from the already too small fire-fighting force, leaving ten firemen to protect a city of about 18,000 population. When it is remembered that for a city of this classification the full manning of a fire department on the two-platoon system would be about 56 men, and the minimum about 32, the significance of the situation is realized. The arrangement of tours with this number of men is for the force to work forty-eight hours continuous duty and then have twenty-four hours off. It is said that this plan only allows one man for each fire apparatus at certain times.

To be sure, there are, it is stated, no end of volunteers who are willing to assist in fighting fires. But untrained men of this kind, under no certain control, would prove of little value in an emergency.

It is a peculiar thing that, in spite of repeated lessons from the experiences of others, city authorities will insist upon reducing the fire fighting forces not only to the danger, but even practically to the vanishing point, when forced to economize. As a matter of fact, the Fire Department should be the very last resort in cases of this kind. Retrenchment in almost any other city department—with the possible exception of the Water Works—should be indulged in before the fire defenses are tampered with. But it usually requires a disastrous event, such as a bad conflagration, to drive home the lesson to such officials.

Fire Prevention Week

The period from October 5 to 11 this year has been set apart as Fire Prevention Week. During that time Fire Departments, under the leadership of their Chiefs, will cooperate with the citizens of cities and towns throughout the length and breadth of the land in an attempt to reduce the fire loss by example and by precept.

In the exercises incident to the week's observance, the Fire Chief should—and usually does—take the most prominent part. This is eminently proper, as no one is better instructed in the methods of all kinds of fire prevention and how best to accomplish this end. He is an expert and consequently should be the leader in the various activities looking toward better fire conditions in his municipality.

The object of Fire Prevention Week is primarily to turn the thoughts of the people toward the necessity for the reduction of our unnecessarily great fire losses. Last year, it is reliably estimated, almost $500,000,000 worth of property went up in smoke in America. It is safe to say that at the very least half of this staggering sum could have been saved to the people by the exercise of care and common sense—in other words, considerably more than $250,000,000 were burned up by the

people of the United States through their own acts of carelessness.

It is to be remembered that this huge sum does not come alone out of the pockets of the careless ones who actually had the fires—it is a tax that every man, woman and child in the country must pay and cannot escape. Bearing this fact in mind, the importance of making the observance of Fire Prevention Week of more universal practice than ever before cannot be overestimated. Every citizen is interested and the Chief and his assistants—whether of the Fire Department or cooperating civilians—should see to it that the lessons of the week are brought home to every individual in the municipality.

This can be done in many ways. Circumstances must, of course, govern the procedure of the committees having the matter in charge, but in general it may be suggested that the schools are a most important medium for scattering seeds of fire prevention information. The scholars, if the matter is presented in interesting fashion, will enthusiastically help in spreading the doctrine of carefulness and cleanliness, and will exert an influence on their elders that is not to be lost sight of. The various civic bodies will also readily and gladly assist in the work. The local press will, undoubtedly, be glad to open their columns to fire prevention propaganda. Merchants in various parts of the municipality will lend show windows for well arranged displays of suitable character.

Last, but perhaps most important, fire apparatus which can be spared can be utilized for fire prevention displays and placards, the trucks, so decorated, making the rounds of the streets, being careful, of course, not to leave any district uncovered by fire protection.

This year should be a banner one for spreading the fire prevention doctrines, and it is not a bit too soon for the wide awake Chief to begin preparations for an unusually active Fire Prevention Week.

Dr. Harry Archer Is Ever Ready to Give First Aid

New York City had three thrilling fires in different parts of the city. At one fire, ten families escaped to the street or were rescued by firemen. The fire wrecked the five-story brick tenement. Dr. Harry Archer, fire department surgeon, was on hand to give first aid to the firemen who were injured while working at the fire.

Rev. Alten Heads N. Y. Firemen

As a reward for many years service in behalf of the volunteer firemen, Rev. Joseph R. Alten, minister of Sea Cliff, N. Y., and vice-president of the New York State Volunteer Firemen's Association was elected president of the association at the annual convention held in Nyack. Rev. Alten was in charge of the memorial services held in memory of four members who passed away the past year.

On behalf of the General Committee of Nyack, a huge loving cup was presented to Judge A. S. Tompkins for his work as chairman of the committee that had charge of the convention details. Judge Tompkins welcomed the convention to Nyack and presented a three-foot key to the village to President Clinton D. Cass of Ithaca. Senator Royal S. Copeland also extended a word of greeting to the firemen.

Capt. and Miss Babcock With the New Austin

Some of the delegates were amused at the new Austin car, the property of Capt. W. P. Babcock, of the Publicity Committee. The car was used in conveying messages during the parade.

A number of interesting papers were presented during the convention.

North Carolina Firemen Meet

Tracing the history of fire fighting organizations in North Carolina, J. C. B. Ehringhaus, of Elizabeth City, chief speaker at the opening business session of the forty-third annual convention of the North Carolina State Firemen's Association, highly praised their present activities and accomplishments. He called attention to the extent of fire hazards in the state, the amount of property at risk and the reduction in fire damage brought about by fire fighters.

Mr. Eringhaus was enthusiastically received by the many firemen at the school auditorium. He presented a companion, Frank Scott, Boy Scout of Elizabeth City, as the youngest fireman in North Carolina. During his address he also paid high tribute to the late James D. McNeill, long state president of the organization.

The firemen decided to investigate the feasibility and expense of illuminating the monument recently erected by them to the memory of Captain McNeill at Fayetteville. A committee will be appointed to look into the matter and report to the executive committee.

Following the recommendation of President A. L. Duckett of Asheville, the drill school was made a permanent annual undertaking of the organization. It will be held next year at Durham. President Duckett also recommended that a standard thread fire hose be adopted.

Statistician Charles Harris of Rocky Mount reported that while there had been an increase of $79,487 in the fire loss of last year over that of the preceding year, there had been a reduction of 141 fires. Greensboro was acclaimed for taking first place in the national fire race, its Chief, Frank Shaw, also being highly praised.

Robert C. Whitley, of New Bern, was elected President of the association to succeed A. L. Duckett at the second day's session. John L. Lewis of Statesville was elected to succeed Mr. Whitley. All other officers were re-elected.

A parade, an address by Mayor Walter Blair of Wilmington, a fish fry, and a band concert were the big events on the second day's program.

Mayor Blair in his speech praised the work of the fire fighters and lauded their efforts in bringing lower insurance rates to the state by their efficiency.

Questions and Answers

NOTE—Readers are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified

Alcohol Fires and Nozzle Reaction

To the Editor:

I would like an explanation in regard to a recent fire we had in our city. We answered an alarm to a building where there were barrels of Jamaica ginger involved. On arriving we were hampered in our operations owing to the close quarters in which the vault of the fluid was stored. We use foam extinguishers to put the fire out, but with no results. After using a few of them we took to carbon tetrachloride. This also was ineffective. We finally put a tarpaulin over the barrels, thereby cutting off the air. The fire was soon smothered out.

The question I am asking is why wouldn't either of the extinguishers put out the blaze? What would you advise for fires involving such liquids?

I am also sending you a copy of a table, as it was submitted to me, regarding reaction on nozzles, etc. Will you kindly explain just what is meant by same.

Cordially yours,

H. E. C.

Reaction Hose Lines—Layout—100 Ft. 2½-Inch Hose

Size of Nozzle inches	Engine Pressure	Nozzle Pressure	Discharge G. P. M.	Friction Loss in hose	Reaction of Nozzle in lbs.	Pressure base of nozzle	Reaction when nozzle opened quickly	Line Pressure when nozzle closed quickly
¾	55	50	118	5	42		51	
¾	80	75	145	5	63		76	
¾	107	100	165	7	84		101	
1	60	50	209	10	75		90	
1	91	75	256	16	113		135	
1	121	100	295	21	150		180	
1⅛	66	50	265	16	95		114	
1⅛	93	70	313	23	133		160	
1⅛	106	80	335	26	152		182	
1¼	74	50	326	23	117		140	
1¼	90	60	357	30	141		169	
1¼	103	70	386	33	164		197	

Answer: The reason you found foam extinguishers ineffective at a Jamaica ginger fire is due to the fact that foam is not effective on alcohol fires and Jamaica ginger contains a large percentage of alcohol. Foam thrown on burning alcohol readily dissolves, and therefore a smothering blanket is not built up.

The failure of carbon tetrachloride is probably due to the limited quantity available in the small size extinguisher.

The most effective extinguisher for alcohol, and therefore, Jamaica ginger, is carbon dioxide gas. When applied in sufficient quantity it will quickly snuff out the fire.

The method you pursued in smothering the fire by spreading a tarpaulin over it is very effective, and will work wherever it is possible to spread an airtight cover over the burning surface. But in many cases the heat is too intense or the burning liquid is flowing over the floor, in which case it would not be possible to cover the fire with tarpaulins or similar covering.

With reference to the table you present showing the reaction of hose lines, this much may be said regarding reaction: Reaction is the kick-back of a nozzle when a stream is being discharged from it. There is no reaction as long as no water is flowing, but as soon as water begins to flow there will be a reaction.

The reaction is greater than the nezzle pressure (taking into account the area of the nozzle). For example, with a ¾-inch nozzle as you show on your table, and with nozzle pressure at 55 lbs., the reaction is 42 lbs. However, the reaction given in this case is the total reaction, while the pressure is in pounds per square inch, and not the total pressure represented by the ¾-inch nozzle.

Reaction, where the nozzle is opened quickly when the line is charged under pressure, is greater than the reaction when there is a steady flow from the nozzle. When the stream is flowing uniformily there is a drop in pressure in the hose line due to friction loss. But when the nozzle is closed, there being no flow, and consequently no friction loss, the pressure at the nozzle (where the line is laid horizontally) will be the same per square inch as that at the engine. There is a certain amount of elasticity to the hose, and when under pressure it increases in diameter. When the nozzle is opened, on a charged line under pressure, the momentary pressure at the nozzle the instant of opening is greater than it will be after a uniform flow has been established. Having a higher nozzle pressure we get a greater reaction, as indicated by the table.

As to the values shown in the table, we presume these are experimental values, and can therefore be checked up only by similar tests, rather than by formula.

Performance of Pumper

To the Editor:

Will you figure out the following problem for us:

We recently had a test in this city of a 750 gallon pumper. Three 50-ft. lengths of hose were used from pumper to torrent nozzle, 2½-inch hose being employed; 200 pounds were maintained on the pump, and a 1½-inch nozzle used.

Will you please let us know what the nozzle pressure was? The discharge in gallons per minute from the nozzle? The vertical range of the stream, the nozzle being directed vertically?

D. E.

Answer: It is not clear just what layout you employed, for you do not state whether the three lengths of hose were laid parallel, or whether they were in the form of a single line. Hence the problem will be worked out both ways and the results of each layout given.

Assuming the lines to be laid parallel from the pumper to the torrent pipe the following calculations are made:

$N.P. = E.P. \div (1.1 + K. \times L)$

Where "K" is the factor depending upon the hose and nozzle diameters. K, for 3 lines of 2½-inch hose into torrent nozzle, equipped with a 1½-inch tip, is .061.

L is the number of 50 foot lengths of hose in the line and is equal to 1 (distance from engine to nozzle).

Then $N.P. = 200 \div (1.1 + .061 \times 1)$

$= 200 \div 1.161$, or approximately 172.5 pounds.

With this nozzle pressure on a 1½-inch nozzle the discharge is found as follows:

$Discharge = 29.7 \times d \times d \times \sqrt{P}$

Where "d" is the nozzle diameter in inches, and "P," the pressure in pounds per square inch.

Then $discharge = 29.7 \times 1.5 \times 1.5 \times \sqrt{172.5}$.

$= 29.7 \times 2.25 \times 13.1$, or 875 gallons per minute.

Such a large discharge from a 750 gallon pumper, and under 200 pounds pressure, is very improbable, unless considerable help is being given by hydrant pressure.

Solution 2. Assume that the line is a single line three sections long, or 150 feet. Engine pressure is, as before, 200 pounds, and nozzle diameter is 1½-inches.

The same formula is employed for finding the nozzle pressure in this case as found in the first instance, but the value of K will be different, being based on a 1½-inch nozzle a single line of 2½-inch hose. K equals .505.

L, which is the number of 50 foot lengths of hose in the line, is 3.

Then N.P. $= 200 \div (1.1 + .505 \times 3)$.

$= 200 \div (1.1 + 1.515)$

$= 200 \div 2.615$, or 76.6 pounds nozzle pressure, approximately.

Discharge is found as in the previous case.

Discharge $= 29.7 \times 1\frac{1}{2} \times 1\frac{1}{2} \times \sqrt{76.6}$

$= 29.7 \times 2.25 \times 8.75$

$= 585$ gallons per minute.

A 750-gallon pumper should give one-half its rated discharge at 200 pounds pumps pressure, or one-half of 750 per minute, or 375 gallons per minute. Thus the pumper in this case is doing far more than should be required of it, unless good hydrant pressure is helping it along.

As for the vertical reach of the stream, it would in the former case be in the neighborhood of 180 feet, and in the latter case, 95 feet.

Note: In the above calculations 29.7 was used in discharge formula instead of 30, for the formula gives more accurate results; and greater accuracy is needed where large nozzles are discharging water under high pressure than is required with smaller nozzles under usual pressures. Ordinarily the "30" in this formula is satisfactory for most purposes, and is commonly employed in solving hydraulic problems both to determine engine performance and for answering examination questions.

Joplin Insures Fire Department

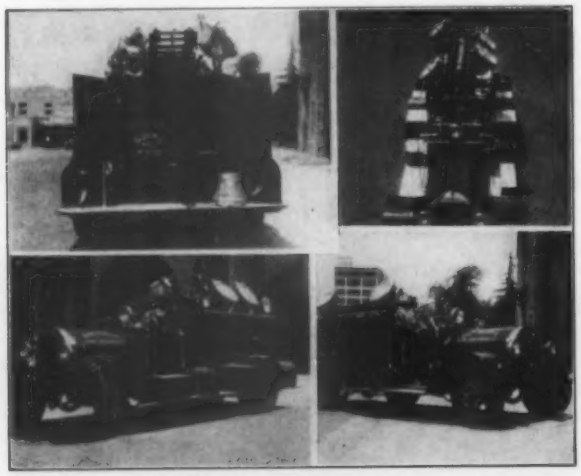
The national tendency toward adopting the group life insurance idea for the protection of municipal employees gained new impetus recently with the covering of 127 city employees of Joplin, Mo., through a policy issued by the Prudential Insurance Company of America.

The total amount involved is $157,000 and the policy includes the fire, police, city hall, park, street maintenance and other departments.

Under the policy arrangement each worker receives insurance in amounts ranging from $1,000 to $2,500, according to the rank or position held and the policy is of the contributory type, the employees paying a part of the premiums and the city assuming the remainder of the expense.

Something New in Squad Cars

The illustrations herewith, furnished through the courtesy of Chief E. F. Coop, of the Pasadena, Cal., Fire Department, show views of the new Light and Rescue Squad Car of the



Four Views of the New Light and Rescue Squad Car for Pasadena, Cal.

department, which was placed in commission on July 18. This machine was originally a 250-gal. pumper and hose car, 1916, from which the pump and body was removed. The chassis was lengthened ten inches and the present body built thereon.

The main features consist of two 2-kw. Kohler lighting plants which provide power for four 750-watt flood lights, two 200-watt portable lights and one 750-watt searchlight. Any of the lights are readily removable from the machine and can be set up where desired, as current is taken off from a cable wound on reels mounted on the rear running boards. Two smaller reels are also mounted on the side running boards for the portable lights.

Compartments are provided for an E. & J. Resuscitator, a Davis Inhalator and extra flasks for the same. The machine also carries a first aid box, salvage covers, salvage equipment, forcible entry tools, etc., and oxygen-acetylene cutting torches. Sufficient oxygen and acetylene are carried to provide for twenty minutes operation.

The work of converting the apparatus, including the painting, was all done in the shops of the Fire Department at Pasadena. The equipment of the car is as follows:

2—1½ qt. Fyre-Fyter Extinguishers
2—Kohler Electric Light Plants with batteries, 2 kw. capacity
2—Large size reels with 250 ft. of heavy cord on each
2—Small size reels with 250 ft. cord on each
4—Large floodlights, 750 watts each
2—Portable lights, 200 watts each
1—Burrell Mask
1—Davis Inhalator with two extra bottles
1—E. & J. Resuscitator with two extra bottles
1—Red Cross Stretcher
1—High voltage tongs
1—Plaster hook, 8 ft.
1—Pike pole, 8 ft.
1—Extension ladder, 20 ft.
1—Roof ladder, 10 ft.
1—Roto-Ray Signal
1—Mop wringer
1—Box assorted nails
1—Claw hammer
3—Sprinkler shut-offs
6—Sprinkler heads
Gas caps and plugs
3—Chamois skins
3—Sponges
1—Wire cutter
1—Bolt Cutter
1—Pinch bar
1—Jimmy bar
2—Augers and handle
1—Key hole saw
1—Door opener
1—Crow bar
2—Long handle shovels
2—125 ft. lengths of ¾" hemp rope
1—100 ft. ¾" hemp rope
2—Axes
1—Blake stretcher
1—Roll tar paper
1—Safety line, 100 ft. of ¾" rope
1—10-ton hydraulic jack
1—Sack sawdust
2—Corn brooms
2—Mops and handles
2—Squeegees
5—Rubber salvage covers 12'x18'
2—Cotton blankets
6—Pr. Rubber gloves
7—Pr. White cover alls
2—Torridaire hot pads
2—Galv. buckets
1—Large first aid kit
3—Hot water bottles
1—Cutting torch outfit complete with extra flasks
1—Aspirator
1—Gibbs mask
1—Scoop shovel

New York Wants More Firemen

Fire Commissioner John J. Dorman, of New York City, has requested an increase of 181 men in his uniformed force, as part of his plans for the coming year. It will be necessary to appoint ten lieutenants and 103 firemen to replace existing vacancies.

Because of the expansion of the Fire Department in outlying sections of the city, he asked for two captains, six lieutenants and fifty-eight new firemen to man two companies in the Flatlands section of Brooklyn and in Woodside, Queens. Forty-four new inspectors and sixteen additional clerical employees are required by the Bureau of Fire Prevention. Thomas F. Brophy, Chief Fire Marshal, has requested two more assistant Fire Marshals and a clerk.

The Fire Department's budget this year is $21,553,796. Next year the department requests $25,002,148, or an increase of $3,448,406.

Hartford, Mich., Buys Fire Apparatus—Hartford, Mich., has purchased a chemical car equipped with ladders.

Fall River, Mass., to Erect Fire House—A fire house is to be erected in Fall River, Mass., the site on which the house will be erected will cost $55,000.

C. A. Bigelow Leaves Portland Service—C. A. Bigelow, Fire Commissioner of Portland, Ore., is leaving public service. J. N. Sullivan, Chief of Utica, N. Y., and First Vice-President of the International Association of Fire Chiefs wired: "His long service, his knowledge of fire protection and his personality have made him an outstanding figure." Chief R. J. Scott, President of the association, and others also sent messages.

Union City Promotes Capt. Friedel, Jr.—The Director of Public Safety, Union City, N. J., reported the promotion of Capt. Charles Friedel, Jr., to the rank of battalion chief. He joined the department in 1920 and was promoted to the rank of captain in 1926. Friedel is a graduate of the New York Fire Department College. Five new firemen were added to the force.

Chief Anderson of Mankato Killed—Assistant Chief "Wally" Anderson of Mankato, Minn., was killed when returning from a fire. A freight train struck an automobile in which he was riding. One hundred firemen from all parts of the state attended his funeral. In the funeral procession were Chief Ben Bangerter of Mankato, Chief Owen C. Dunn of St. Paul and Chief C. W. Ringer of Minneapolis.

TEN PHILADELPHIA FIREMEN INJURED AT TANNERY BLAZE

Four Alarms Turned in for Plant Constructed Entirely of Wood — Fire Had Good Start Before It Was Discovered

By EDWARD H. SPRANGERS

TEN firemen were slightly injured in a four-alarm fire that swept through the plant of the Belgrade Leather Company in the northeastern part of Philadelphia, Pa. The plant was constructed entirely of wood and all that was left was the charred remains of two buildings. It occupied an area of 250 feet by seventy-five feet.

The blaze had a good start before an alarm was sounded. Six pieces of apparatus responded to the first alarm recorded at 12:19 p.m. The second was sent at 12:27, the third at 12:32 and the fourth at 12:37 p.m.

Chemicals used in tanning leather made ready fuel and caused heavy smoke clouds to settle over the neighborhood.

All That Was Left of the Tannery Buildings

Good work on the part of the first alarm companies prevented the spread of fire to nearby buildings.

Several firemen escaped serious injury when two smoke stacks crashed to the ground. Street car and motor traffic were tied up for nearly two hours. It was not until after six p.m. that the last company returned to the fire station.

Members of the Second Alarmers' Association were quick to respond to serve iced limeade and seltzer, for the day was very warm.

WHAT'S BURNING

THE following list includes fires of $25,000 loss and over in the United States and Canada, for the periods designated in the headings. These figures, compiled from telegraphic reports, are based on estimates made at the time, and are subject to later investigation and consequent revision. Taken as a whole, however, they give an approximately correct view of the losses incurred. The figures represent loss in thousands of dollars.

Week Ending August 22

GENOA, ILL.—Genoa Mfg. Co., plant destroyed..... 85
MILWAUKEE, WIS.—Whse. of Rfister & Vogel Leather Co..... 50
CHILTON, WIS.—Calumet Rendering Co. destroyed..... 55
MONTREAL, Canada—Hamilton plant of Can. Iron Fdry..... 85
BURLINGTON, WIS.—Wien bldg. and others damaged..... 60
EMMA, N. C.—Hyatt Mfg. Co., sawmill destroyed..... 50
PORTSMOUTH, VA.—Kirn bldg., High and Middle Sts..... 25
NANTUCKET, MASS.—Fishing schooner Gov. Fuller 25
VONDA, SASK.—B. & P. store and pool room..... 25
CHICAGO, ILL.—Laboratories of Wilson & Co..... 25
SHAMOKIN, PA.—10 houses on Vine St..... 30
PAULSBORO, N. J.—Hill Theatre destroyed..... 25
TORONTO, ONT.—5 story brick bdlg..... 40
MONTREAL, ONT.—Whse. of Canada Sugar Refining Co..... 86
OAKFIELD, WIS.—7 Bldgs. on A. J. Heagle farm..... 25
GADSDEN, ALA.—Stock house of Southern Mfg. Co..... 25
COOPERSVILLE, MICH.—2 whses. & barn of E. P. Doggett Canning Co..... 25
BAY CITY, MICH.—2 barns at Bay Co. Infirmary..... 40
CAMBRIDGE, MASS.—Plant of A. H. Hews Co..... 450
ARKADELPHIA, ARK.—Plant of Arkadelphia Sifting Herald.... 50
NEW HAVEN, CONN.—Brick plant of Howard Co..... 175
WESTON, ONT., CAN.—Whse. of Canadian Cooper. Wood Growers 450
GADSDEN, ALA.—2 brick bldgs. on Broad Street..... 65
TEKOA, WASH.—Whitman County Lumber Yds. damaged..... 35
CLEBURNE, TEX.—Dwelling of Ed. Mooring and adj. prop..... 25
VICTORIA, B. C.—45 bldgs. of Kapoor Lumber Co..... 275
DICKSON CITY, PA.—Three dwellings destroyed..... 25
SODDY, TENN.—Dwelling of T. H. Newberry destroyed..... 25
DEQUEEN, ARK.—Cooper Bros. Dry Goods Co. and adj. prop..... 25
BOSTON, MASS.—Apt. block at 311 Huntington Ave..... 65
NEW YORK CITY—Whse. of New York Journal, Water St. 85

Week Ending August 29

LOS ANGELES, CAL.—Studio of Chas. Chaplin at Boyle Heights.. 65
KANAKEE, ILL.—Erzinger food store damaged..... 35
PARAGOULD, ARK.—Yds. of Vail-Donaldson Cooperage Co..... 60
BALDWIN LODGE, MISS.—Hotel Baldwin Lodge..... 30
NEWPORT, KY.—Dine Furniture Co. store damaged..... 40
GLENSHAW, PA.—Barn of Geo. Calvert destroyed..... 25
MONTROSE, PA.—South Montrose Mfg. Co. plant and adj. prop... 65
LOWBANKS, ONT.—Dwellings and farm of H. King and adj. prop. 25
WILLOWS, CAL.—Renaud & Wolcott grain whse. destroyed..... 65
BUFFALO, N. Y.—St. James Roman Catholic Church in Depew.... 60
CRISFIELD, MD.—Drug store & adj. bldgs..... 25
DELAND, ILL.—Blacksmith shop & garage..... 25
KAPOOR, B. C.—Thirty private residences..... 200
WINNIPEG, MAN.—Assiniboine Grain Co. elevator..... 50
LANGHORNE, PA.—Barn on farm of Sydney Potashnick..... 40
HELENA, ARK.—Helena Fire Station & adj. property..... 40
CHAUMONT, N. Y.—Farm property of A. L. Rogers & adj. property destroyed 75
ELLICOTT CITY, MD.—Property of Morris Schapiro at Folly Quarter destroyed 65
COLUMBUS, OHIO—Milo St. car barn of Columbus Railway Power & Light Co. damaged..... 125
EL PASO, TEX.—Whse. of Fabrica de Aceite de Algodon destroyed 30
JOHNSTOWN, PA.—Three bldgs. at Ideal Park destroyed..... 30
HARRISBURG, PA.—Furniture whse. of Miller Furn. Co destroyed 200
POINT MARION, PA.—Lockard Lumber Co. plant and adj property damaged 50
MINNEAPOLIS, MINN.—Old grain elevator destroyed..... 80
BILOXI, MISS.—Hotel Alvalez Bldg., including stores..... 65
MEMPHIS, TENN.—The "Showboat," a night club destroyed..... 25
HELMER, IDAHO—Storage yards of Lewis Lumber Co. planing mill damaged 65
WHITLEY CITY, KY.—Star Hotel, Baptist Church and Several bldgs. destroyed 80
ROCK ISLAND, QUE.—Several business bldgs. destroyed..... 125
BLOOMSBURG, PA.—Plant of American Car & Fdry. Co. destroyed and surrounding property damaged 400
STELLARTON, N. S.—Business and residential property destroyed 35
JERSEY CITY, N. J.—Hudson County Coal Co. bldg. damaged.... 40
ISHPEMING, MICH.—Ishpeming High School destroyed..... 65
ST. ELOI, QUE.—Property occupied by M. Carpenter..... 35
PICKENS, MISS.—Yds. and plant of National Lumber Co. destroyed 25
DARDANELLE, ARK—Eight stores in Satterfield block damaged 80
LUBBOCK, TEX.—Three business bldgs., other property damaged 250
VIRDEN, ILL.—Two clothing stores destroyed..... 25
DERBY LINE, VT.—Several whses. and C. R. Counter creamery 86
CHARLTON, MASS.—Stock barn at Masonic Home destroyed.... 130
LEETINIA, OHIO—Ferguson bldg. destroyed and four others.... 80
BERWICK, PA.—Coblentz dept. store destroyed..... 35
ALLENDALE, S. CAR.—Santee Heading Corp. destroyed..... 75
ATLANTIC HIGHLANDS, N. J.—Bldg. owned by Paddock estate 25

Eastchester, N. Y., Firemen Insured—Volunteer firemen of the town of Eastchester, N. Y., are protected by insurance against injury and death while on duty. The policy will not conflict with the benefits granted by the Firemen's Benevolent Association. The paid firemen of the department are not covered by the new policy, but they are protected by the workmen's compensation laws.

London Firemen at a Warehouse Fire

A large fire developed early in the evening on Princes' Wharf opposite the Victoria Embankment. Firemen may be seen working their way up to vantage points on the adjoining roofs.

THE ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

KIPLING'S description of the British soldier applies too well to the average American volunteer fire department:

For it's Tommy this and Tommy that
And Tommy all the day.
But it's Mr. Thomas Atkins
When the band begins to play.

Civic pride of the individual swells within him as he views the assembled fire department in its dress uniform when it participates in the various parades staged by the city. There are always defenders of the good name of the boys when a champion is needed during the village store arguments. But it is just too bad for the individual, if he should get injured in line of duty.

Some of the boys will call, to be sure, and there will always be gifts of cigarettes and fruit and magazines, but the issue of who will pay the doctor's bills and for loss of time is cleverly avoided. Few communities protect their men with a blanket compensation policy.

In the box on this page is the question that is treated. In the box on the following page is the problem that will be discussed in the next issue. Should you have some comments that you would like to add to the next discussion or if you have a question that you would like to see treated, write to the "Round Table Editor," FIRE ENGINEERING, 24 W. 40th St., New York, N. Y.

HERE IS THE PROBLEM

Do you have an insurance policy to compensate volunteer firemen for injuries received in line of duty?

If not, how do you compensate your firemen and what are some of the adjustments made?

What is your opinion of compensation insurance?

Discussion of the Question

It is surprising, indeed, to note how few cities provide monetary protection for their men. The replies follow:

W. L. Hooks, Chief, Valencia, Pa.: Members of this department are covered by two insurance policies. An Act of Assembly No. 387 approved May 14, 1925, classes members of volunteer fire companies as employees of the city, borough, incorporated town or township in which their fire house is located and equipment housed. The district under this act of Assembly therefore must cover the members of the fire company with Workmen's Compensation insurance, otherwise the district is liable for the injury or death of the fireman. We are covered by insurance.

All foreign fire insurance companies doing business within this state must pay to the state two per cent on all policies written in the state. This comes back to the treasurer of the respective town, borough or township which is in turn, turned over to the relief fund of the companies protecting the district. With the funds we receive from this source we have taken out group insurance covering any twenty-five men who may attend a fire.

Therefore our men are covered up to thirty dollars a week for injury plus free medical attention. In case of death following an injury received while going to, returning, or at a fire, the dependents or beneficiary will receive $1,000 outright and a monthly allowance as provided in the compensation law of fifty-six dollars until $5,000 has been paid.

E. J. Wingler, Chief, Milo, Me.: We have no compensation insurance.

We have had only one serious injury. The town raised the money for lost time and the fire department paid for medical service from a relief fund supported by entertainments and so forth. Following that injury, the town took out an accident insurance policy for a few years. Last Spring this protection was discontinued and we now depend entirely upon our Relief fund, with possible help from the town and its citizens.

I am a firm believer in compensation insurance for volunteer firemen as this service which is voluntarily given, should be fully protected in case of accident. It should not be dependent upon the uncertain vote of the citizens or the town.

J. A. Philips, Chief, Hamilton, Mont.: We do not have an insurance policy to compensate volunteer firemen for injuries received in line of duty.

We compensate for injury, sickness or death from the Firemen's Disability Fund which at present amounts to $6,000. Claims are filed with the Board of Trustees of the association. The chief and president of the fire department are members. We have at present a fixed schedule of five dollars a day for loss of time and we pay all hospital and doctor's bills, and for the necessary medicine. If we had authority under the state law, we would likely carry a blanket insurance for the relief fund is too small to take care of a number of total disabilities or deaths occurring at one time.

We had two men injured at a fire about three years ago and they were in a hospital for two weeks. The total bill including loss of time amounted to $500. We found it necessary to establish a fixed rate of pay for there is a wide variance in the earning power of a volunteer fireman.

I believe that compensation insurance is excellent for volunteer departments.

Robert C. Howe, Chief, Fort Bragg, Cal.: The volunteer firemen of this department are covered by the State Compensation Insurance Fund, the premium of which is rather high, and is paid by the city. We have not had any accidents of consequence. I consider insurance the best means of taking care of volunteer firemen.

H. F. Wilkins, Chief, Dexter, Me.: We do not carry any compensation insurance. We have just started a relief fund which is intended to pay doctors' bills.

I am very much in favor of an insurance to care for the men while in service.

Harry Callaahn, Chief, Centerville, Md.: We carry compensation on our members and think this the best way to take care of the situation.

E. J. Hutchinson, Chief, Boothbay Harbor, Me.: We never have had insurance to protect firemen, but we shall in the near future. The town is to take out workmen's compensation insurance. The injured men will receive two thirds of the pay that they were getting at the time of the accident. I believe that volunteer firemen should be insured in some form.

(*Continued on page 773*)

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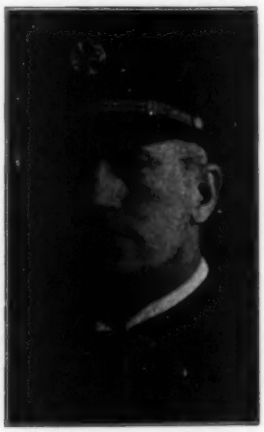

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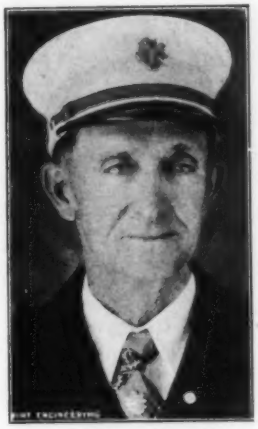

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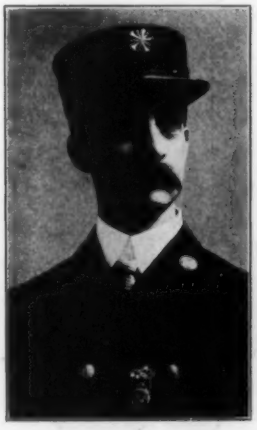

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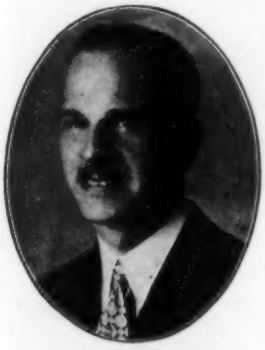

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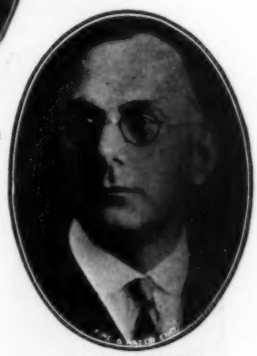

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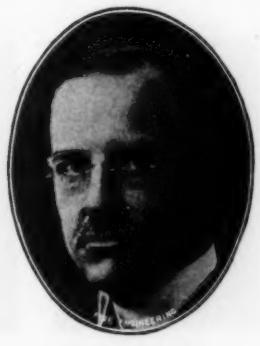

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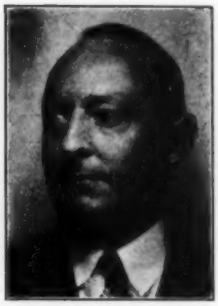

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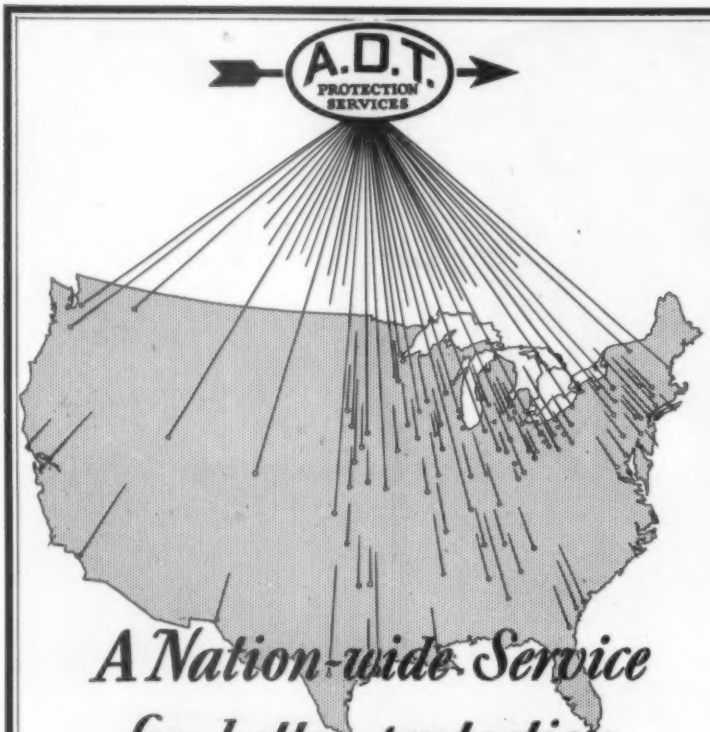

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This new handle can be used when opened, locks in a direct position and directs the stream.
Here's the gun folded back, not in use. Note how new handle control is out of the way.

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Always the best in the service—is now even better. If you've been putting off getting one, act now; let us show you this even GREATER EASTMAN DELUGE GUN.

Always the "best in the service"—we intend to keep it so; hence the progressive improvements. This, let us remind you, is the famous gun that handles the most powerful streams *in any direction, by one man.* Just point her and she'll do the rest. Acts as wagon pipe and deluge set; can also be used as deck pipe. Siamese castings are made of special aluminum alloy, with brass fittings to eliminate wear.

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Send Now for Catalogs

The Round Table

(*Continued from page 754*)

Jens Kalberg, Chief, Hardin, Mont.: No insurance is carried. Compensation is made through the firemen's disability fund. A blanket form of insurance for volunteer firemen would be the greatest thing for the firemen.

W. W. Putnam, Chief, Essex Junction, Vt.: We do not have insurance to compensate firemen for injuries received in line of duty.

In the few cases where men have been injured or overcome by smoke, all doctors' bills have been paid from funds accumulated by the department. I believe every municipality should provide compensation for volunteers and call men of the fire department.

Roy Hamor, Chief, Bar Harbor, Me.: No insurance is placed.

Both volunteer and paid firemen are protected by the workmen's compensation law. In case of total disability, the fireman is paid a maximum of $1,800 plus all hospital and doctor's bills. We also have a Firemen's Relief Fund which pays fifteen dollars a week in addition to what the town pays. This makes a total of about thirty dollars a week. I believe that insurance should be carried in some form, but for small towns such as ours, the rate seems excessive.

Thomas Gilleece, Chief, Hancock, Md.: Our state association takes care of men injured in line of duty.

W. A. MacPherson, Fire Inspector, Easton, Me.: We do not carry an insurance policy on our men. They are just volunteers. We carry compensation on road men.

Frank L. Hiser, Chief, Bel Air, Md.: We carry a blanket policy to compensate volunteer firemen in case of injury while in line of duty. I believe that such a policy is absolutely necessary for the protection of the boys. So far only one claim has been made. The insurance company paid $160 for loss of time following an injury.

J. E. Beeler, Chief, Boonsboro, Md.: An insurance policy, which we carry, has been found the best way to take care of any volunteer fire company.

George H. Coleman, Chief, Fryeburg, Me.: We no not have insurance protection for the men. In case of minor injury, money is taken from the relief fund; for major injuries we resort to voluntary subscriptions.

Compensation is the proper thing in departments where the liability of accidents at fires are greater than in most rural communities.

E. W. Baker, Secretary, Brentwood, Md.: The Brentwood department is a member of the Maryland State Firemen's Association and through that association receives compensation for injured firemen; also insurance. We are also a member of the County Volunteer Firemen's Association and that association through dues from its members take out blanket insurance with the Maryland Casualty Company.

We believe our system is a good one and that our firemen are adequately protected.

N. Jaffe, Chief, Bowie, Md.: Our county fire association carries a blanket policy on all companies in the association. It protects twenty-five men in active service in each company. The policy is held by the association and the premium is prorated to each company.

If this insurance was not carried by the association, it would be carried by the individual company. We feel that every firemen deserves and should be protected by such insurance.

Answers to Previous Question

W. S. McLoughlin, Chief, Bayonne, N. J.: This department has an agreement with a local photographer whereby he is called upon at all times to take moving pictures of gross violations, hazards and damage done by fire through carelessness. Enough is developed to make an interesting picture which is shown at the various schools and picture houses during Fire Prevention Week. Pictures are taken of suspicious fires and are used in court proceedings. It is my opinion that the trouble and small cost of this plan is well worth while.

Chas. J. Brennan, Chief, San Francisco, Cal.: Most of the pictures used by the fire department are taken by members of the police department as they have a regular photographic bureau. I believe pictures are of great value to any fire department and should be a part of their records.

W. C. Watters, Chief, Oak Park, Ill.: All hazards and violations where prosecution is contemplated, also suspicious fires, are photographed. These photographs are taken by a member of the police department who is also a fingerprint expert. We have already secured two convictions on arson. Pictures were used as evidence and proved very important.

Geo. Haggerty, Chief, Berkeley, Calif.: Photographs of suspicious fires are taken by a member of the police department who has a man assigned to this work. I think this is a step in the right direction as the photos are used as evidence, thus aiding us in wiping out arson. After use, the backs of the pictures are labelled with the time of the fire, the date, damage done, name of the owner or occupant, how the case was disposed of, and any other information available. The photos are then kept on file for future reference.

W. S. Knight, Chief, Salt Lake City, Utah: This department very frequently has pictures taken of hazards, violations and suspicious fires. A captain in our department is an expert photographer and colorist and the work is done by him. For reference, comparison and schooling purposes, such photos are very desirable and useful.

John C. Moran, Chief, Hartford, Conn.: It has been customary for us to take photographs of all violations, suspicious fire layouts, accident to apparatus and in all cases where court proceedings are liable to be instituted. We usually have a commercial photographer do this work. The pictures frequently prove very valuable in connection with court cases.

G. Rehm, Chief, Mobile, Ala.: While we do not take pictures of fires such as you mention, I consider it an excellent idea. We have an arson squad here and all fires of a suspicious nature are turned over to them.

Thos. F. Burns, Chief, Bridgeport, Conn.: This department has photographs taken of hazardous conditions and suspicious fire settings. The pictures are taken by commercial photographers and turned over to the state police department to investigate. This work has proven of great value, especially in the case of incendiarism.

Frank Parkey, Chief, Gary, Ind.: All our photographs are taken by commercial photographers. We consider this part of our work very valuable.

HERE IS THE PROBLEM FOR THE NEXT ISSUE

Do you use any special signal on your apparatus to distinguish it from commercial cars at night?

Do you believe that such special signals or markings are worth while and necessary?

Fire House Opened in St. Paul—A new fire station costing $35,000 has been placed in service in St. Paul, Minn. It houses an engine and a ladder company.

Passaic, N. J. to Erect Fire House—A fire house costing $60,000 is to be erected in the Richfield section of Passaic, N. J. Other districts of the city have petitioned for the erection of a fire house.

Primitive Fire Equipment Purchased—Syracuse, Ohio, has authorized the purchase of one hundred buckets, half a dozen tubs and several barrels of salt so that a bucket brigade may be formed in the village.

Berkeley, Cal., Making Fire Study—Data is being collected on various fire departments to form a basis for a five-year improvement plan that will be proposed for Berkeley, Cal. The City Manager has been appraised of the pressing need of an 85-foot aerial ladder, two new pumpers, the construction of a fire station, and the appointment of eight additional firemen.

Fig. 6—In Japan Even the School Girls Are Taught to Fight Fire

Owing to the inflammable buildings, Tokyo school girls are made proficient fire fighters. Note the old hand fire engine and fire buckets being used in the drill.

Fighting Fire in Mikado's Kingdom

(*Continued from page 746*)

mounted on motor chassis with triple-combination engines of 500 gallons capacity. The pumps are made in Japan and the chassis used are mostly of American make. Japan presents an excellent market for the sale of all types of fire equipment, including hydrant connections, nozzles, steam, and gasoline pumps, and hose. The Japanese already make these goods themselves,

Fig. 4—Temple Bell Tower, Kobe, Japan

In ancient times also employed to ring the alarm in case of fire. Note the wooden ram.

but the material and machinery are not so perfect or as reliable as that made here. For instance, hose of Japanese make generally leaks under even small pressure everywhere and anywhere.

The use of modern fire-apparatus is bound to spread to all parts of Japan, as concrete buildings and even private dwellings built in Western style are being erected to an ever increasing extent. Neither watch-towers (which are too low to detect a fire in a modern building in Tokyo and elsewhere) nor ancient methods of fighting a fire go far to keep down or prevent fires from arising in Japan, and the Japanese Government has come to realize this and have decided to install modern fire alarm apparatus, increase the number of motor fire equipment and try to get the people to contribute towards the expense. The authorities have accordingly decided to abolish fire watch-towers.

May Eventually Abolish Watchmen

In Tokyo alone it has been ascertained that citizens spend over $500,000 a year on employing watchmen to guard their house at night and to go over prescribed routes, as a guard against fires and burglars. These watchmen clap two pieces of wood together as a signal to the people indoors that all is well and at the same time to frighten thieves from their nefarious intentions. It is, however, doubtful whether these watchmen are of great help in the detection of fires or of frightening away burglars. And there seems to be a growing realization of this, with the result that sooner or later the money spent on paying these night-watchmen may go towards the purchase of more modern fire-alarms and fire-equipment in general.

The majority of houses in Japan are small, one or two stories in height and the fire-equipment required need, therefore, be small in size, in fact, toylike compared with that used here. Of course, when it comes to the business centers of the leading cities such as Tokyo, Osaka, and Kobe besides a few other towns, then it is another matter. There you have banks, commercial and industrial firms housed in palatial buildings and big department stores modeled after the American style.

Japan Honors Her Firemen

Japan has had her firemen for centuries. In fact, this body of men has always been held in high regard among all classes of Japanese. The fire-fighter or "Endokko" used to receive no salary; his position was one of honor. In his spare time he did odd-jobs for which he was paid. Even to-day many of the firemen in the small towns consist of volunteers, while in the larger cities (Tokyo, Osaka, Kobe, etc.) they are paid.

The Japanese fire-brigade of olden times consisted of officers, hookmen, pike-men, the ordinary worker, and the standard-bearer. When the bell from the local temple (Fig. 4) or police station or box warned them of a fire, it was for them to hurry to the "scene of battle" with their implements and to pull down the burning structure with their long poles with hooks at the end as well as using their pikes for shoving the debris. There was no effort made to save the house; the main thing was to prevent the fire from spreading.

No Japanese fire-brigade went to the scene of the fire without

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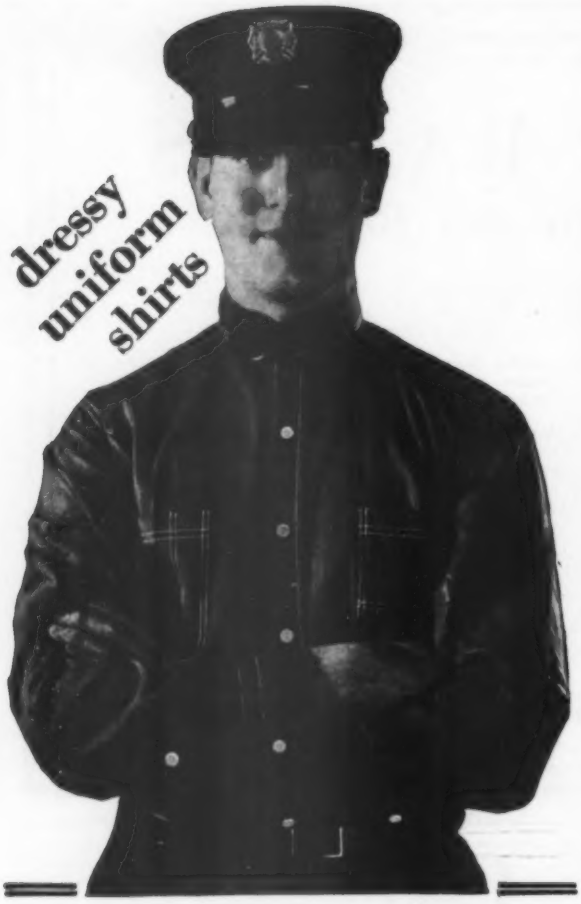

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You are not limited to one pattern or style — there is a wide variety in Signals, including collar-attached styles. You can depend on Signal quality — long wearing fast color fabrics, good, comfortable fit, and really dressy appearance. We'll gladly send you samples and full particulars on request.

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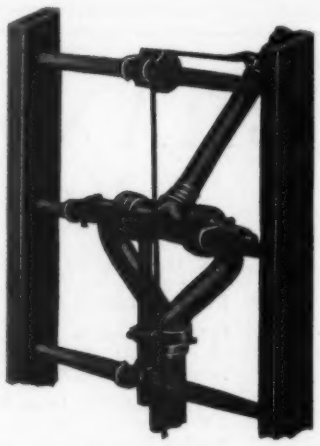

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THE POWERFUL SIXSET (illustrated) will get your men out faster. It's powerful penetrating call is audible for miles.

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its standard or "matoi." Each brigade had its standard and they would carry it through thick and thin, even lose their lives over it. For a fireman to lose his life in a fire is considered a most honorable death among the Japanese.

Uniform of Japanese Firemen

Japanese firemen are attired in tight-fitting cotton trousers, coats, gloves, and socks made of thick canvas. In their spare time they will act as carpenters, running errands, street and house decorators, night-watchmen, in fact do any job coming their way. On the back they will have a Japanese character printed or painted signifying to what fire-brigade they belong.

Union of Fire Brigades Organized

Some time ago the Japanese Home Minister organized a Union of the Fire Brigades in Japan, comprising all the firemen in the country as its members, and the Minister as its President. The object of the Union is to study and investigate fire prevention and extinction and to publish and disseminate literature on these subjects. While Japan is up-to-date in the larger cities with fire-extinguishers and other fire-equipment, much of which is imported, the country would benefit if the services of some American experts on outbreaks of fire, their prevention, and effective extinction were engaged, and these besides giving technical advice might be of still greater service by instructing Japanese firemen in the handling of modern appliances.

Fig. 7—A Large Fire in Tokyo, Japan

This picture illustrates very clearly the conditions which the firemen of the Flowery Kingdom have to meet. Fires are very apt to become conflagrations under the circumstances.

Fire Insurance Rates High in Japan

Owing to the frequency of fires in Japan, fire insurance rates are naturally high in that country. Claims are frequent, but are not as quickly settled as insurance companies do those arising here; the suspicion of incendiarism is rather strong among the Japanese themselves.

About three years ago, after a fire which razed to the ground hundreds of houses and small factories in Tokyo, many of the occupants of which were not insured (nothing unusual in Japan), fire insurance companies (who escaped unscathed) simultaneously put up a signboard on the burnt site announcing in large letters "shall pay at a moment's notice insurance money to our insurance customers!"

Heavy Fire Loss Through Earthquake

Most of the loss caused by the great Earthquake of September 1, 1923 (about 90,000 people were killed) in Yokohama and Tokyo, was due to fires resulting from the bursting of gas pipes, fusing of wires, and the easiness with which Japanese dwellings caught fire. Small earthquake-tremors are frequent in Japan, in fact, they are a daily occurrence. The matter of guarding against possible outbreaks of fire is becoming of increasingly greater importance in Japan, though there does not seem to be any decrease in the number of fires due to carelessness, or to any other cause. Those desiring to make a study of fires could not do better than pay a visit to Tokyo.

Fire Prevention Day in Japan

Three years ago the Tango Earthquake took place in Japan, and cities in Osaka, Kyoto, Hyogo, Shiga, and Nara prefectures commemorate the disaster March 7 by observing that day as a "Fire Prevention Day." Fire motor-engines go about distributing leaflets warning citizens against fire, aeroplanes are also employed for the same purpose; lectures are given in many schools on the danger of fires and the prevention of outbreaks, and children are put through practice in case of earthquakes how best to seek safety. In this and similar ways are the people in Japan instructed in the better prevention of fire and mode of acting when conflagrations take place.

CORRESPONDENCE

Gasoline Hazards in Sewers

To the Editor:

Your Round Table Editor in the July 23 issue brought up one of the most interesting and important subjects, not only to the Fire Chiefs but to the public in general, that has been considered for some time. We should hear from more of the Chiefs as to their experiences.

The Chiefs' replies as a whole give me the impression that they have not considered the dumping of gasoline in sewers in its broadest sense. In general, they speak of various bureaus created by ordinances for garage inspections. Now as a matter of fact, I don't wish for one minute to minimize the danger of dumping from garages, but the other potential sources from which gasoline actually enters into the sewers have been shown by experience to be of major importance. None of the replies touched on dye works, cleansing establishments, and the householder, and I believe that a check-up in almost every city and town would tend to show that the average householder is more of an offender than the average garage, and this is confirmed to an extent in the Bureau of Mines Report, Technical Paper 117, for March, 1916.

Notwithstanding the fact that there are numerous non-inflammable liquids for sale as safe substitutes, when the housewife wants to clean a pair of gloves, silk stockings, underwear, or various articles, it is gasoline that is used, and the handiest place she will select is the bath tub, and the easiest way of getting rid of the dirty liquid is by pulling the plug, with the result that from one to five gallons goes down into the sewer.

In these amounts a more dangerous hazard can be created than if a barrel of gasoline was dumped in the sewer at one time. (See Bureau of Mines Report on Pittsburgh, previously referred to.)

Gasoline has been used with fatal results in washing machines. I have also in mind a case of a woman washing out silk stockings pulled up over her arms rubbing the same together, thereby furnishing the static spark necessary to complete the disaster of a badly-burned pair of arms.

Now then, this is not only a hazard in the sewer but it is a hazard in the house itself because of the volatile nature of gasoline, and it is the lack of the proper mixture or ignition that has prevented many a serious disaster.

Many householders violate the terms of their insurance policy by the amount of gasoline they keep in their houses and even this not in safety cans, to say nothing of the hazard they create if a fire should occur on their premises.

Supreme Court Justice Thomas H. Noonan of Buffalo set a court precedent in New York State with his ruling that fire insurance is not collectable if the blaze is caused by incendiary origin, or if more than one gallon of gasoline is stored where fire occurs. The standard form of insurance policies for Massachusetts specifically state that not more than one quart in all of gasoline shall be kept for household use.

The amount of gasoline bought from various service stations in small lots by the householder is appalling. The service station man is in a peculiar position. He dislikes to refuse the request of a customer for a quart or a gallon which he knows is being taken home for cleaning purposes, and, of course, this doesn't account for the housewife who milks the family automobile.

Under instructions of the Dominion authorities, I investigated a sewer explosion in the City of Ottawa in 1929, and under my direction the Chief Fire Prevention Inspector made a survey of all service stations. The total for seventeen stations showed 291 gallons of gasoline sold in the month of June, but here is the amazing part. Of that quantity there were 157 gallons sold in glass milk jars.

Bear in mind that June is not considered a house-cleaning month; therefore, the amounts are low. In fact, one service station stated that while in June they only sold ten gallons, their average sales for household consumption was thirty gallons per month.

Now then, as in all fire prevention problems, it is a question of cooperation and education, and I believe the Chief in each town can reduce hazards as well as losses by a systematic and continuous process of cooperation and education of the householders as well as the industrial field.

Personally I believe that the sooner we get back to rules and regulations similar in severity to the old regulations for handling dynamite; the sooner the public will awake to some of the facts of the dangers, personal as well as property, which exist in gasoline improperly handled.

Familiarity certainly breeds contempt, or the chap would not occasionally drive up to the gas station and proceed to light a match to find out how much gas he has in his partially emptied tank and continue to do it notwithstanding the numerous fatal cases.

A further danger is from the dumping of gasoline in the public streets from tank wagons, due to collisions or breakdowns. This emphasizes the fact that the gasoline danger is many-sided and that proper regulations are woefully needed for transportation.

Tacoma, Pittsburgh, Boston, Newburgh, and other cities have suffered from actual incidents, and there is no reason for any city or town to consider themselves exempt from the results.

I believe the problem should be given additional consideration and the dangers brought home to the public.

Very truly yours,

JOHN CAMPBELL, Honorary Member,
Fire Chiefs' Club of Massachusetts.

Handling the Frame Stable Fire

(*Continued from page* 745)

Should fire start on the second floor, it is apt to fully involve the upper part of the building before the apparatus arrives. If it starts on the ground floor, it may not reach the upper floor before apparatus reaches the scene, and in this case there is a possibility of holding it.

But once fire gains such intensity as to spread through the building and involve the material on both floors, there is little chance for the department putting it out before the building has been destroyed.

Livestock, particularly horses and mules, are difficult to move from a building which is afire. Horses in a stable which is afire, become frantic. They are hard to handle and may bite and kick so it is dangerous for men to approach them unless familiar with handling horses. Where sparks are dropping from the hay loft down on their backs, it becomes practically impossible to control the horses. About the only thing that can be done in such a case is to cut the halter rope or remove the bars so that they can get out of the stalls. Many fire officers have reported that although the fastenings are removed horses have been found to remain in their stalls due to their fear. They must then be driven out if possible, but if they still persist in remaining, they can sometimes be removed by covering their heads with bags or blankets and leading them to safety. While mules are equally stubborn they are not inclined to become quite as frantic as horses.

Cows are seldom found in the type of stables such as described above, and even if so, they are not secured in the manner that horses might be. Where dairying is carried on the building is apt to be of a better class of construction and offer less chance of fire getting away.

In general, in handling stable fires where horses are present, the first move should be to open up the building front and rear so that the temperature may be lowered and some of the smoke cleared out. The horses should be removed while the lines are getting in operation. Rather than operate lines in on ground floors, it is safer and more convenient to get the first line in operation in the loft, if fire has reached this part of the building, and if there are horses below which must be removed.

Quick ventilation, too, is absolutely necessary in order to release the heat and smoke and make possible the attack of the fire at close quarters.

Steamer Presented to Museum

Added to the collection of exhibits at the famous Smithsonian Institute in Washington, D. C., has now been placed one of the old time steamers that were drawn by the noted "three-horse hitch." The steamer was presented to the museum by the American-LaFrance and Foamite Corporation as a reminder of what is considered as the romantic period in fire department history.

The steamer began its eventful career in the summer of 1906, when it was built at the Seneca Falls, N. Y., plant of the American Fire Engine Company, a forerunnr of the present organization. The steamer was designed to pump 500 gallons a minute, and test records before the unit was delivered to Alexandria, Va., show that it developed 140 pounds steam pressure and 220 pounds water pressure.

After serving Alexandria for many years, it was replaced

Steamer Presented to Smithsonian Institute, Washington, D. C.

by a motor pumper. The steamer is now housed under the same roof that protects the famous Col. Lindbergh's "Spirit of St. Louis," and other examples of automotive design.

Pianos Called Apartment Hazard

The piano, once favored as the musical instrument for the American home, has now reached the level where it is catalogued as an apartment fire hazard.

Under the supervision of the Tenement House Commission, an intensive drive was conducted in New York City to locate violation of the tenement house law.

In the area bounded by Forty-sixth and 110th Streets west of Columbus and Ninth Avenues, which contains the so-called San Juan Hill and Hell's Kitchen districts, the inspectors found many violations. In this area 947 buildings were inspected and eighty-one violations were found; 6,778 fire escape balconies had to be cleared.

Inspectors found that the radio was so popular that families looked upon their pianos as "white elephants." When moving, rather than pay the ten-dollar moving charge, the modern New Yorker leaves the piano for the property owner to dispose of as he will. As is often the case, the piano is moved out of the vacant apartment and is stored in the hall.

In districts inhabited by railroad workers and others who daily come in contact with opportunities to pick up coal and pieces of firewood, Commissioner Deegan's men found these workers preparing for a hard Winter. At any rate, they were seeking to settle the fuel expense item by bringing home, day by day, from work, in bundles and in sacks, small quantities of coal and wood which by the end of the Fall would have grown to great size.

Although the tenement house inspectors could not object to workers bringing in fuel where they could get it, they could and did object to it being piled on the balconies and steps of fire-escapes and in hallways where it constituted a grave menace.

It was explained that in the section from Forty-sixth to 110th Street the large number of tenement houses of the old type, with fire escapes in most instances on two sides of the buildings, accounted for the fact that more violations

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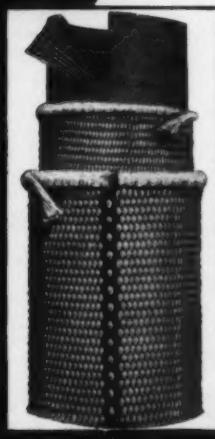

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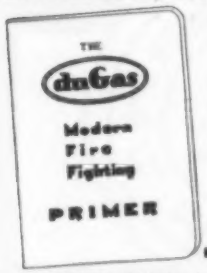

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were found in proportion to the number of houses visited than in the area from 110th to 155th Street.

Blocked and wired fire escapes and doors to basements and roofs the inspectors found a serious problem. In some instances ice-boxes were found on fire-escape balconies. In many other instances flower pots and refuse pails were found on the fire-escapes. Chief Inspector Jones pointed to the fact that the flower pots and refuse pails were not only fire hazards, but also menaces to the health and safety of persons passing on the streets below.

Connecticut Fire Fighters Meet

By unanimous vote of the three hundred delegates assembled at the 47th annual convention of the Connecticut State Firemen's Association held at Bridgeport, Connecticut, on August 16-17, Michael J. Whalen of Hamden was elected as president of the association to succeed William J. Crockett of South Manchester. Other officers chosen were Vice-President, Assistant Chief William J. Daley of Hartford; Secretary, David W. Hartford of South Norwalk; Treasurer, Michael T. Souney of New Britain and Chaplain, Rev. Michael J. Thompson of Willimantic.

Michael J. Whalen
President, C. S. F. A.

Following the election of the state officers the delegates elected the following county vice-presidents: Fairfield county, Joseph J. Dean of Bridgeport; Hartford county, John J. McMahon of Unionville; Tolland county, George B. Milne of Rockville; Windham county, Frederick Dumas of Putnam; New London county, C. H. Edmonds of New London; Litchfield county, John H. Griffin of Norfolk; New Haven county, Irving Hamilton of New Haven, and Middlesex county, A. J. Foley of Portland.

Several matters of importance to the various fire department members in Connecticut were taken up during the two day session. Ten new companies were added to the membership of the organization and one company was dropped from the roster, according to the report of Secretary Hartford. The present company membership is 349; department membership, 287; past presidents, 23, and chaplain, one, making a grand total of 660.

Payments made for death, disability and orphan benefits during the year amounted to $19,147.40, an increase of $953.50 over the previous year. Balance on hand for the close of the year was $21,663.77.

Prior to the state convention meeting, the annual get-together of the State Fire Chief's Club was held at the Hotel Stratfield where fifty chiefs met to elect officers. Those chosen were President, Rufus Fancher, ex-chief of the New Haven fire department. Ex-Chief Fancher has been president of the Chief's Club since 1913. Secretary-Treasurer, D. B. Mercer of West Haven. Six fire chiefs were admitted to membership in the club.

A request from the fire companies in East Haven that the 1931 convention be held in that town was given consideration and while the selection was left to the Executive Board, in all probability the next convention will go to East Haven.

THOMAS F. MAGNER.

Roxbury Fire Chief Dead

Henry B. Page, head of the Roxbury Volunteer Fire Department on Long Island, died at his home at the age of seventy-eight. In June he won the William Todd silver cup for the oldest fireman in line of march at the annual parade at Long Beach, L. I. Mr. Page organized the Roxbury fire department about twenty-five years ago and he has been chief ever since.

He was well known in Masonic circles. Mr. Page is survived by his widow, a daughter, two sons and three sisters.

Electrically Operated Ladder Designed

An electrically operated aerial ladder has been designed and patented by Charles Dean of Elmira, N. Y., for twenty-eight years with a large fire apparatus manufacturer where he worked largely on aerial trucks.

The operating mechanism for raising the main ladder is said to be very simple. A motor operates a main screw and nut arrangement which in turn controls the raising

Electrically Operated Spring Hoist Aerial Ladder

spring action. To bring the aerial ladder down onto the bed, one has simply to reverse the position of the controling lever. The action is easy, and to raise or lower the ladder is but a matter of seconds.

A unique feature of the raising apparatus is that the ladder is locked in position at any angle, automatically. The aerial ladder is counterbalanced with the coil springs eliminating undue strain on the motor. Maximum speed of operation is insured. The device can be controlled by one man. As a precautionary measure it is equipped with hand operated mechanism in the event that low power or motor trouble should develop.

ARTHUR W. ESPEY.

Fire House Closed in Zanesville, O.—The Hamline fire station in Zanesville, Ohio, has been ordered closed by Chief Scott Power because of lack of man-power and fire hose. The men and equipment were removed to the central fire station.

New York Has Another Waterfront Fire

The building on Pier 10, East River, New York City, formerly occupied by offices of the Munson Line, was badly damaged by fire. Two of the city's famous suspension bridges may be seen in the background.

The Winnipeg Fire Department

(*Continued from page* 740)

also is a manufacturing centre and is the automobile and fur trading centre of the three prairie provinces, Manitoba, Saskatchewan and Alberta.

Winnipeg boasts the largest railway yards in the world, and is recognized for its efficient and artistic street lighting. It has a bracing climate—bright, sunny days in the spring, summer and fall, with cool evenings. In the winter it is even more bracing, on many occasions experiencing extremely low temperatures, but it is a dry cold and the people suffer little or no inconvenience.

The City also has beautiful, wide streets, and is noted for its unlimited supply of soft water, which is piped in from Shoal Lake, ninety-six miles away.

The City is governed by a Mayor and 18 Aldermen. The present Mayor is Colonel R. H. Webb. The fire department is responsible to the Committee of Public Safety, of which Alderman E. T. Leech, K.C., is chairman.

Winnipeg, Chief Boulden and his firemen are famous for their hospitality. Visiting fire chiefs are assured a hearty welcome, and a pleasant time while attending the 1930 International Convention.

New York Fire Marshal on Arson

(*Continued from page* 748)

knows that fires in specific lines of merchandise are business barometers. Depression in trade, changing styles and unseasonable weather are other contributing causes for arson.

Fire Marshal's Staff Should Attend Every Fire

"But there will never be genuine and thorough fire investigation until a member of the Fire Marshal's staff responds to every commercial fire. I believe strongly that a force should be maintained to respond with alacrity and dispatch second only to that of the fire fighters themselves. The great force of law and official power conferred on the fire investigating authority of New York City is very encouraging in this sort of public service. The right of subpoena applicable to any person with knowledge of the cause or origin of a fire is a potent weapon in the hands of the Fire Marshal who can compel the production of books, documents and records that might lead to the possible cause of a crooked fire. The police powers conferred on the Fire Marshal since the days of reconstruction of municipalities closely following the Civil War are the possible reasons for the Police and the Fire Department investigators being so closely akin.

Engineering and Photographic Aids

"The use of engineering and photographic help in arson cases to-day is far more extensive than it used to be. The guarding of premises where suspicion of incendiarism exists, the debarring of persons from premises afire who might have an insurable or partial interest in the outcome of the claims presented on the policies, the proper recording of the time and circumstances surrounding visits of persons to burned premises —all of these activities help the proper investigating and prosecuting authorities toward the end of a just and equitable result where arson is even suspected.

"The use of the dial telephone to-day is one instrument that no longer aids the authorities in tracing the last telephone call sent from the scene prior to the fire. Under the 'voice with the smile' system the number called was made a matter of record. Now under the mechanical dial system only the time of the call is indicated, and nothing more, if the last call before the fire happened to be a local one.

"Sprinkler systems have done much in aiding the authorities in investigations of incendiary fires. Despite the presence of automatic sprinklers and their automatic fire alarm signal, some short sighted persons have ventured to plant incendiary fires. The recording devices attached to these sprinkler systems have frequently been of material and invaluable aid in running down suspicious fires, as well as checking the flames and revealing the 'plant.'

Cooperation of Courts Essential

"The co-operation of the courts is essential in cases involving arson. Proper public interest and a conscientious sense of duty on the part of the presiding magistrates in the courts of initial jurisdiction is prerequisite to adequate administration of justice in dealing with those culprits who, for selfish gain, and in utter disregard of the lives and property of their fellow citizens, to say nothing of the welfare of the fire fighters of this country, apply the torch in perpetration of one of the most cowardly and un-American crimes—arson."

One of the Smallest Steam Fire Engines in the Country

The steam fire engine shown herewith is one of the smallest in the United States. It is a duplicate of an old Clapp & Jones engine and was made fifty years ago by Sinclair Blackwelder, a member of Pioneer Engine Company, of the old volunteer Charlotte, N. C., Fire Department. It will draft water and throw a stream fifty feet. The youthful Fire Department will be seen preparing to get up steam and extinguish the fire in the "cottage." Photo, courtesy, Chief W. H. Palmer, Charlotte, N. C.

Deadly Carbon Monoxide

(*Continued from page* 744)

comes" have been formulated recently by the American Medical Association. Fresh air is the first. If breathing has stopped, begin artificial respiration by the prone-pressure method now standard for cases of drowning. Do not move the victim at all unless it is necessary to provide fresh air. If he is lying on cold ground, put blankets or coats under him rather than over him. Keep the body warm but not hot. After recovery of consciousness, all exercise—even walking a few steps—is best avoided for several hours. Universal knowledge of these rules and of the danger which necessitates them would undoubtedly save many lives.—*The Forum for June, 1930.*

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from thousands of comparative tests, that

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NOW we'll let you be the judge and jury. To any department chief who now has, or is planning to buy, a siren that he believes is the best in the service—we will gladly send prepaid one of our HEDBERG SUPER SIRENS for comparison. *Naturally* you must want the best—we're glad to help you *get* the best. Thousands in actual use have proven their dependability. On new apparatus be sure to specify a HEDBERG, not an ordinary "squawker" of cheap make.

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35-in. length—Lightweight
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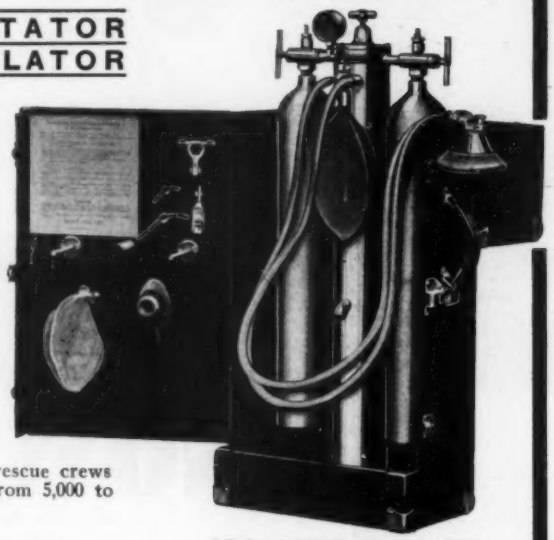
is a combination of the two machines its name implies. It is the latest development for use in the application of artificial respiration to persons who have lost the power of breathing through any cause, such as asphyxiation, suffocation, electric shock, drowning, carbon monoxide poisoning, and for resuscitating new born infants.



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SIMPLICITY OF OPERATION—The use of the machine can be taught in a few moments time and requires only one operator regardless of the length of time required for resuscitation.

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GIVES real protection and comfort in any weather and at any kind of fire. Designed to permit freedom of action, eliminating cumbersome excess weight. Made of materials that withstand the hardest kind of usage. Bodyguard apparel is used by Firemen everywhere.

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PROPOSED IMPROVEMENTS

Brentwood, Penn.—The Brentwood Volunteer Fire Department is considering the purchase of fire apparatus.

Dauphin, Penn.—The Dept. of Internal Affairs voted in favor of issuing fire station bonds to the amount of $10,000.

Seattle, Wash.—According to reports a fire station will be erected in the Haller Lake territory if an item in the budget for 1931 is pased by the Council.

Jarrettsville, Md.—At a recent meeting of the Board of Directors of the Jarrettsville Fire Company, a committee was appointed to go into the question of purchasing fire fighting equipment that will meet the present demands.

Omaha, Nebr.—The city council has voted in favor of issuing fire station bonds to the amount of $30,000.

Stillwater, N. Y.—The Board of Trustees are considering the installation of new fire alarm boxes throughout the village.

Urichsville, Ohio.—The City Council is interested in the purchase of a new fire truck, according to reports.

Suffern, N. Y.—The Suffern Community club are planning to raise funds for the purchase of a new fire truck.

Whittier, Calif.—At a recent meeting of the city council an ordinance was passed for the organization of a fire department. Debbie E. Allen is City Clerk.

Position Wanted

Delivery Engineer, thoroughly experienced and reliable, expert demonstrator, good mechanic, can handle sales also. Desires position with progressive manufacturer. Address: Box 285, c/o Fire Engineering, 24 West 40th St., New York City.
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For Sale

3—40 Gal. Foamite-Childs chemical tank equipped. Perfect condition—cheap. Municipal Fire Equipment Co., 4713 Oakley Ave., Cleveland, Ohio.
9-3

CONVENTION DATES

Sept. 1-4—PACIFIC COAST ASSOCIATION OF FIRE CHIEFS. 37th Annual Convention, Oakland, Cal. Secretary, Jay W. Stevens, 1014 Merchants' Exchange Building San Francisco, Cal.

Sept. 2-4—KENTUCKY FIREMEN'S ASSOCIATION. 11th Annual Convention, Paducah, Ky. Secretary, Capt. S. G. Render, 940 Starks Bldg., Louisville, Ky.

Sept. 2-5—DOMINION ASSOCIATION OF FIRE CHIEFS. 22nd Annual Convention, Port Arthur, Ont. Secretary, Chief James Armstrong, Kingston, Ontario, Can. Exhibit Space, Chief A. S. Kappelle, Stratford, Ont.

Sept. 9-11—ILLINOIS FIREMEN'S ASSOCIATION. 43rd Annual Convention, Peoria, Ill. Secretary, Assistant Chief Roy W. Alsip, Fire Department, Champaign, Ill. Exhibits, Chief Albert. Herring, Fire Department, Murphysboro, Ill.

Sept. 9-12—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. 58th Annual Convention, Hotel Royal Alexandra, Winnipeg, Man., Canada. Recording Secretary, Chief James J. Mulcahy, Yonkers, N. Y.; Executive Secretary, Jay W. Stevens, 1014 Merchants' Exchange Bldg., San Francisco, Cal.; Chairman, Exhibit Committee. Chief Charles Alt, Fire Headquarters, St. Louis, Mo. Hotel Reservations, Chief D. A. Boulden, Winnipeg, Man.

Sept. 16-17—IOWA FIREMEN'S ASSOCIATION. 53rd Annual Convention, Boone, Ia. Secretary, Paul Soener, Independence, Ia.

Sept. 16-18—MASSACHUSETTS STATE FIREMEN'S ASSOCIATION. 51st Annual Convention, Pittsfield, Mass. Secretary, Daniel J. Looney, Room 1043, Old South Bldg., Boston, Mass.

Sept. 19-20—NEW JERSEY STATE FIREMEN'S ASSOCIATION. 53rd Annual Convention, Auditorium, Atlantic City, N. J. Secretary, William Exall, Chamber of Commerce Bldg., Newark, N. J.

Sept. 23-25—NATIONAL ASSOCIATION OF POLICE AND FIRE SURGEONS and Medical Directors of Civil Service Commissions. 9th Annual Convention, New York City, President, Dr. Harry M. Archer, Honorary Medical Officer, N. Y. F. D.; Secretary, Dr. Arthur Wildman, New York Municipal Civil Service Commission, New York City.

Sept. 24-25—MISSOURI STATE FIREMEN'S ASSOCIATION. Annual Convention, Trenton, Mo. Secretary-Treasurer, M. J. Mulvoy, 3500 S. Grand Boulevard, St. Louis.

Sept. 29-30—TEMISKAMING FIREMEN'S ASSOCIATION. Seventh annual convention. New Liskeard, Ont., Canada. F. E. Thompson, Secretary-Treasurer, New Liskeard, Ont.

Sept. 29-Oct. 3—NATIONAL SAFETY COUNCIL. 19th Annual Safety Congress, William Penn and Fort Pitt Hotels, Pittsburgh, Pa. Managing Director, W. H. Cameron, headquarters, 20 North Wacker Drive, Chicago, Ill.

Oct. 7-9—FIREMEN'S ASSOCIATION OF THE STATE OF PENNSYLANIA. 51st Annual Convention, Hotel Americus, Allentown, Pa. Secretary, Charles E. Clark, 411 Bellevue Avenue, Wayne, Pa.

Oct. 8-9—WISCONSIN STATE FIRE CHIEFS' ASSOCIATION. 2nd Annual Convention, Sheboygan, Wis. Secretary, Chief Arthur J. Rahn, Fire Department, Two Rivers, Mich.

Oct. 15—FIRE CHIEFS' EMERGENCY PLAN OF WESTCHESTER COUNTY. Regular meeting and Mayors' Night. Fire Headquarters, Mt. Kisco, N. Y. Secretary-Treasurer, E. Riviere, Fire Headquarters, Larchmont, N. Y.

Oct. 21-23—NEBRASKA STATE VOLUNTEER FIREMEN'S ASSOCIATION. 49th Annual Convention (2d in year), Scottsbluff, Neb. Secretary-Treasurer, H. A. Webbert, Kearney, Neb.

Oct. 21-23—RAILROAD FIRE PROTECTION ASSOCIATION. 17th Annual Convention, St. Louis, Mo., Secretary-Treasurer, R. R. Hackett, Baltimore & Ohio R. R., Baltimore, Md.

November—SONOMA COUNTY FIREMEN'S ASSOCIATION. Annual Convention, Petaluma, Cal.

May 11-16, 1931—NATIONAL FIRE PROTECTION ASSOCIATION. 35th Annual Meeting, Toronto, Ont., Can. Managing Director, Franklin H. Wentworth, 60 Batterymarch St., Boston, Mass.

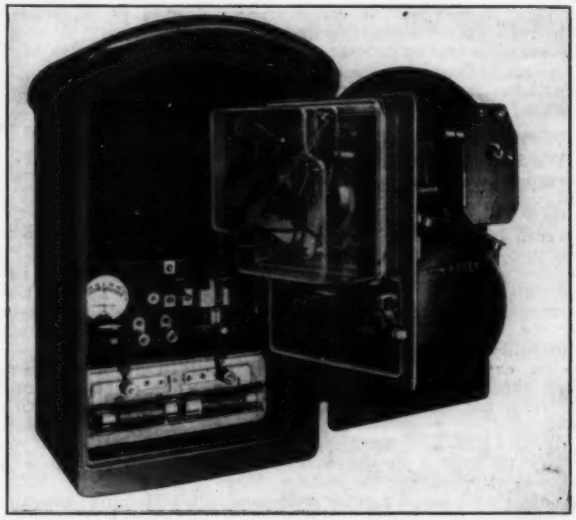
New Type Fire Alarm Box

A new type fire alarm box has been developed by the Horni Signal Manufacturing Corporation.

The box casting is made from an aluminum alloy. The instrument is so constructed that forty rounds or ten complete 4-round calls may be transmitted in addition to which two more rounds are obtained after the forty rounds have been used. This is so that when less than four rounds are registered, the central station will know that the particular box sending an alarm must be rewound. There is a device to prevent over-winding.

A glass shell, through which no moving parts project, protects the movement. The glass cover can be taken off for adjustments.

Whenever the movement stops, a mechanical action closes the circuit so that all other boxes on the circuit are not affected. The shunt contact is of a sliding type operated by the lever which trips the movement, fitted with a chromium-plated split finger spring contact.



Inside of Horni Fire Alarm Box

The mechanism for operating the trip lever of the movement and the reset hook is located on the rear or inside of the door of the outer shell.

Fire Alarm Headquarters for Kearny

At the urgent request of Chief Knowlton F. Pierce, the council of Kearny, N. J., appropriated $50,000 for erecting and equipping a fire alarm headquarters.

The building will have four rooms, a garage for the fire alarm truck, work room, instrument room, and battery room. A heavy fire wall will divide one room from the other.

New equipment in the instrument room will consist of a 14-circuit central office switchboard, 12-circuit repeater, 14-circuit protector board, and a low current relay board. The battery room will be equipped with the necessary batteries and two motor generator sets. When the building is completed and the equipment installed, the circuits that are now overloaded will be split and a normal number of boxes placed on each circuit. Fifteen new boxes will be added to the system.

Saugus, Mass., Buys Ladder Truck—Saugus, Mass., voted to buy a ladder truck from the McCann Company, Portland, Me.

Radio Placed on Cleveland Ladder Truck—A new Seagrave ladder truck installed in Cleveland, Ohio, has been equipped with radio. Radio sets have also been installed on the city's two fire tugs. Alarms will be broadcast from Station WRBH, the city's police radio station.

Miller Eastern Representative for Boyer—Donald Miller, Jr., is the eastern sales representative for the Boyer Fire Apparatus Company. In the August 20 issue an error was made in stating that Mr. Miller was the Germantown Branch representative. Mr. Miller's headquarters is at 5604 McMahaon Ave., Philadelphia.

FALSE ALARMS

THEY HELD

After securing prices from a number of tailors, an order for uniforms was given to a man from town.

A rather stout fireman came rushing into the tailor shop shortly after the uniforms were delivered, and in his hand he held out a coat for the tailor to see.

"This is the coat of my uniform. When I put it on for the first time, the seam in the back split open——"

"Great! That just goes to show you how the buttons hold on our clothes," replied the tailor.

We heard the following bit of conversation while traveling home in a crowded subway:

"My boss is so considerate. He never holds me after five o'clock."

POOR EVIDENCE

Jerry who pounded the typewriter for the chief, was a type individual who believed in saving his skin, even at the expense of lying. The chief knew this and called:

"Jerry, did you mail that letter I gave you?"

"Yes, Chief. I remember very distinctly mailing it in the first box I came to after leaving the station. You can see that I haven't got it with me."

"That will do, Jerry. I never gave you a letter to mail."

It would be interesting to know just how many sales insurance men have lost out this summer by slapping prospects on sunburned backs.

ALL EQUAL

The following conversation was overheard at the carnival staged by the Rushville Fire Department:

"Give the little girl a chance."

"Naw, make her buy one—we ain't runnin' this raffle on a no-pay basis, are we?"

The air mail is doing wonders for this country. Under the new service a writer in New York can send a manuscript to Hollywood and get it back in four days.

TOO LITERALLY

Joe's black eye excited considerable curiosity. He was rather a mild tempered fellow and never known to participate in street fights.

"Here is how it happened," explained Joe. "McCarthy was drunk and was in the lock-up for two days. He came back yesterday and that was also his birthday. So I wished him many happy returns."

A college man may get a kick out of a letter with a check enclosed, but there is nothing more exciting than to open a package of laundry to see what you have.

SAME OLD WAY

The boys had staged a "men only" party for their lieutenant who had been married for five years. He was teased a lot about married life.

"Do you act toward your wife as you did before you married her?" one asked.

"Exactly. I remember just how I used to act when I first fell in love with her. I used to lean over the fence in front of her house and gaze at her shadow on the curtain, afraid to go in. And I act just the same way now."

A modern flapper has to keep her wits about her—she has nothing else to protect her.

INTERESTED

Henry's most peaceful moments were when he reported for duty at the fire house. Unlike the other boys, he was not so keen to check out and return home when the platoons changed.

One day he received the following note intended for a wealthy resident of the same name:

"Unless you pay us $20,000 at once we will kidnap your wife."

Henry left a note at the spot directed:

"I ain't got a dollar, but am interested in your proposition."

It begins to look as though the real vanishing American is the pedestrian.

A GOOD MIMIC

The boys at the smoker had treated him all too kindly. After he had let himself in through the front door, the hall clock started to strike the hour.

"What does the clock say?" asked his indignant wife upstairs.

"It shays 'tick-tock' and doggies shay bow-wow' and cows shay 'moo-moo' and little pushy cats shay 'meow-meow.' Now ya shatishfied?"

It is a good plan, when you leave a speakeasy, to look under the table to be sure that you haven't forgotten somebody.

SCIENTIFIC REPORT

He always wanted to be a fireman, and he finally enrolled at a school where applicants were trained for the entrance examinations. He was rather indifferent during the gymnasium work and the instructor spoke to him.

"The best thing you can do is to drop out of the course. To be quite candid with you, your only trouble is laziness."

"I know sir. But what's the scientific name for it? I've got to report to the wife."

SUCH IS LIFE

Jerry was on his way home, attired in his uniform, after serving a shift with the day platoon. A man with a highly colored nose approached:

"Pardon me, sir, but could you tell me where I can get a drink?"

"Mister, I'm just a fireman on my way home," said Jerry. "You're the third man who has mistaken me for a policeman today."

Don't blame your wife's relations. Remember you selected them.

Drawing by "Art" Espey

Badly In Need of Hose

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LEADER LINE SIAMESE WITH QUARTER TURN VALVE
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Research chemists and fire protection engineers are so amazed at its fine performance that it is being recommended as standard equipment on apparatus, factories and stores where serious fire hazards exist.

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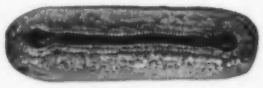

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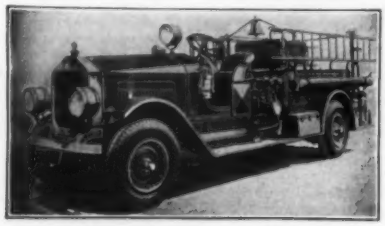

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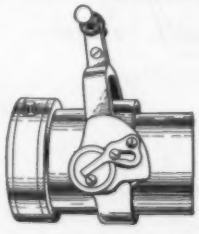

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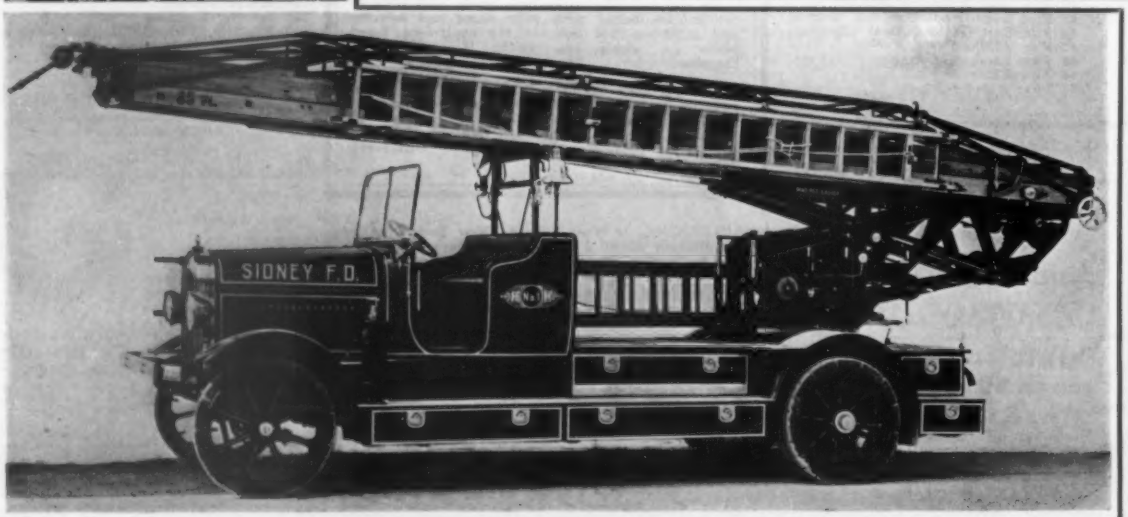

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A

Ahrens-Fox Fire Engine Co.....726-727
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Globe Manufacturing Co..... 783
Gordon, Roy 780

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Even in Weather Like This

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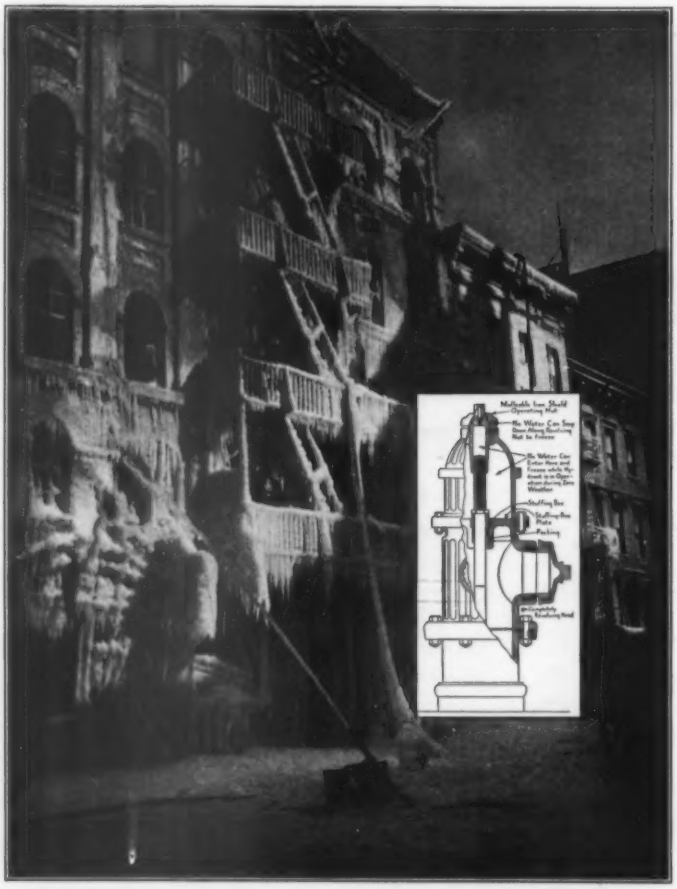

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Cannot Freeze Because No Water Can Reach It

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The shield nut protects the revolving nut against rain, snow, sleet or stream spray. The location of the stuffing box prevents water from climbing up around the operating thread or stem when the hydrant is open. Therefore, no ice can form to interfere with easy and positive opening and closing. Automatic draining keeps water from freezing in the barrel after the hydrant has been closed. For these and other reasons, Mathews Hydrants are preferred in Cold Climates. Ask the men who use them.

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VALVE BOXES
FLOOR STANDS

R. D. WOOD & CO.

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(centrifugally cast)
and PIT CAST

THE LIFE OF YOUR HOSE DEPENDS on the INTEGRITY OF ITS MANUFACTURER

FABRIC

Wax & Para Gum Treated Cotton Rubber Lined

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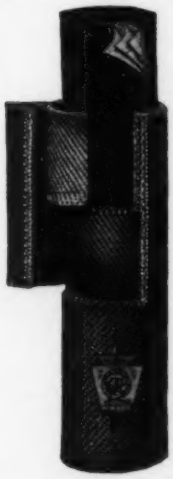
THERE are many points of importance in the manufacture of good fire hose; points that demand care and the greatest skill. Here in our factory among the Connecticut hills are gathered a personnel of capable executives and workmen who's job is to see that you get dollar for dollar value out of Fabric Hose.

The mechanical process used in the manufacture of our hose is a process worthy of note if you buy hose from which you expect *exceptional service.* The threads are wax and para gum treated before they are woven, thereby insuring uniform toughness and absolute resistance to weather and water. *Fabric Hose will not rot — it is mildew-proof — pliable, strong and durable.*



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FIRE APPARATUS

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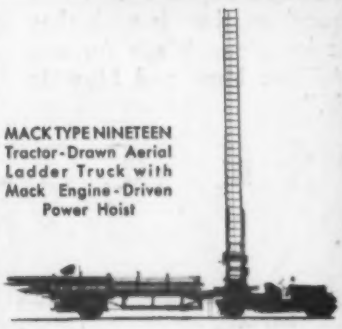
500 Gallon Pumper

MACK TYPE NINETY
750 Gallon Pumper

MACK TYPE NINETEEN
1000 Gallon Pumper

MACK TYPE NINETY
City Service Hook and Ladder

THE MACK ENGINE DRIVEN POWER HOIST



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Tractor-Drawn Aerial Ladder Truck with Mack Engine-Driven Power Hoist

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There can be no doubt of Mack's position in the Fire Apparatus field. Since the Birmingham convention the following cities have purchased Mack units—a positive evidence of Mack Progress!

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Bridgeport, Pa.
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Revere, Mass.
Youngstown, Ohio
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Tyler, Texas
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Peekskill, N. Y.
Cornwall, N. Y.
Plainfield, N. J.
Lebanon, Pa.
New Haven, Conn.
Middletown, Conn.
North Tarrytown, N. Y.
Kennebunkport, Me.
Berkeley, Cal.
North Tonawanda, N. Y.
Bridgeport, Conn.
Spring Valley, N. Y.
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